EQUIP 2022

Education Quality Improvement Programme for class ten

Student Support Material for Class Ten

(English Medium)

DIET KASARAGOD

ആശംസ

വികേന്ദ്രീകൃത ആസൂത്രണത്തിലൂടെയും നിർവ്വഹണത്തിലൂടെയും കേരളത്തിലെ ആരോഗ്യ വിദ്യാഭ്യാസ മേഖലകളെ ദേശീയ തലത്തിൽ ഒന്നാമതെത്തിക്കാൻ നമുക്ക് കഴിഞ്ഞിട്ടുണ്ട്. ഈ നേട്ടങ്ങൾ കൈവരിക്കാൻ പ്രാദേശിക ഭരണകൂടങ്ങൾ സ്തുത്യർഹമായ പങ്കുവഹിച്ചു. കോവിഡ് പ്രതിസന്ധി രൂക്ഷമായപ്പോൾ കേരളത്തിലെ പൊതു വിദ്യാഭ്യാസ മേഖല നിശ്ചലമാകാതെ മുന്നോട്ടുകൊണ്ടുപോകാൻ നാമെല്ലാം കൈകോർത്തു പിടിച്ചുകൊണ്ട് ശ്രമിച്ചു. എന്നിരുന്നാലും മുഖാമുഖ പഠനാനുഭവങ്ങളുടെ അഭാവം പത്താംതരം വിദ്യാർത്ഥിൾക്ക് പഠനവിടവുകളും പഠനനഷ്ടങ്ങളും ഉണ്ടാക്കിയിട്ടുണ്ട്. ഈ പ്രശ്നം പരിഹരിക്കുന്നതിനുവേണ്ടി കാസർകോട് ഡയറ്റും പൊതുവിദ്യാഭ്യാസ വകുപ്പും ഒത്തുചേർന്ന് നടപ്പാക്കുന്ന **'എകിപ്പ്'** *(EQUIP)*പഠനപരിപോഷണ പരിപാടിക്ക് ജില്ലാ പഞ്ചായത്തിന്റെ എല്ലാ പിന്തുണയും ഉറപ്പുതരുന്നു. പത്ത് വർഷത്തെ പഠനപ്രവർത്തനങ്ങളുടെ മികവിന്റെ അടയാളമായി മാറുകയാണ് പത്താം ക്ലാസിലെ വാർഷിക പരീക്ഷ. അറിവിന്റെ തെളിമയോടെ ഓരോ വിദ്യാർത്ഥിക്കും പരീക്ഷ എഴുതാൻ കഴിയണം. കോവിഡ് ദുരിതങ്ങളാൽ സ്കൂളിലെ കൂട്ടായ്മകൾക്ക് മങ്ങലേറ്റിറ്റുണ്ട്. വിദ്യാർത്ഥികളുടെ ജീവിതത്തിലെ ഏറ്റവും പ്രധാനപ്പെട്ട പരീക്ഷകൾക്ക് വേണ്ടി തയ്യാറാക്കിയ ചോദ്യബാങ്കിന് എല്ലാവിധ ആശംസകളും നേരുന്നു. നന്നായി പഠിക്കുക. പരീക്ഷയെ സധൈര്യം നേരിടുക.

ശ്രീമതി ബേബി ബാലകൃഷ്ണൻ

ജില്ലാ പഞ്ചായത്ത് പ്രസിഡന്റ്

കാസർകോട്

ആശംസ

കാസർകോട് ജില്ലാ പഞ്ചായത്തിന്റെ നേതൃത്വത്തിൽ ജില്ലയിലെ പൊതുവിദ്യാഭ്യാസ മേഖലയെ ശക്തിപ്പെടുത്തുന്നതിന് നിരവധി പ്രവർത്തനങ്ങളാണ് നടന്നുവരുന്നത്. കോവിഡ്-19 നമ്മുടെ ശ്രമങ്ങളെ പിന്നോട്ടടിക്കാൻ ഒരു പരിധിവരെ കാരണമായിട്ടുണ്ടെങ്കിലും, അതിനെയൊക്കെ അതിജീവിച്ചുകൊണ്ട് പൊതുവിദ്യാഭ്യാസ മേഖലയെ പൂർവ്വാധികം കരുത്തോടെ നാം മുന്നോട്ട് നയിക്കുകയാണ്. ഈ ഘട്ടത്തിലാണ് കാസർകോട് ജില്ലാ വിദ്യാഭ്യാസ പരിശീലന കേന്ദ്രം (DIET) പത്താം ക്ലാസ് വിദ്യാർത്ഥികളുടെ പഠനവിടവുകൾ പരിഹരിക്കുന്നതിനും ആത്മവിശ്വാസത്തോടെ പൊതുപരീക്ഷയെ നേരിടാൻ അവരെ പ്രാപ്തരാക്കുന്നതിനും വേണ്ടി പഠനപരിപോഷണ സാമഗ്രി തയ്യാറാക്കുന്നത്. കുട്ടികളുടെ അക്കാദമിക മികവ് ഉറപ്പുവരുത്തിക്കൊണ്ട് മികച്ച ഗ്രേഡുകൾ നേടാൻ അവരെ സജ്ജമാക്കാൻ *'എകിപ്പ് 2022'* എന്ന പേരിൽ ഡയറ്റ് കാസർകോട് തയ്യാറാക്കിയ ഈ പദ്ധതിക്ക് കഴിയട്ടെയെന്ന് ആശംസിക്കുന്നു.

സ്നേഹപൂർവ്വം

അഡ്വ. സരിത എസ്.എൻ.

ആരോഗ്യ-വിദ്യാഭ്യാസ സ്ഥിരം സമിതി

അധ്യക്ഷ, ജില്ലാ പഞ്ചായത്ത്,

കാസർകോട്

ആശംസ

കോവിഡ് പ്രതിസന്ധികളെ മറികടന്നുകൊണ്ട് നമ്മുടെ വിദ്യാലയങ്ങൾ വീണ്ടും കുട്ടികളുടെ കളകളാരവങ്ങളാൽ മുഖരിതമാവുകയാണ്. എസ്.എസ്.എൽ.സി., പ്ലസ്ടു പരീക്ഷകൾ പടിവാതുക്കൽ എത്തിനിൽക്കുന്നു. മുഖാമുഖ ക്ലാസുകളുടെ കുറവുകൊണ്ട് കുട്ടികൾക്കുണ്ടായിട്ടുള്ള പഠന വിടവുകൾ പരിഹരിച്ചുകൊണ്ട് ആത്മവിശ്വാസത്തോടെ പരീക്ഷയെഴുതാൻ കുട്ടികളെ പ്രാപ്തരാക്കാനുള്ള പരിശ്രമത്തിലാണ് നാം എല്ലാവരും. ഈ അവസരത്തിൽ കാസർകോട് ഡയറ്റ് വിദ്യാഭ്യാസ വകുപ്പിന്റെ പൂർണസഹകരണത്തോടെ തയ്യാറാക്കിയ **'എകിപ്പ് 2022'** പഠനസാമഗ്രി ജില്ലയിലെ പത്താം ക്ലാസ് വിദ്യാർത്ഥികളുടെ അക്കാദമിക മുന്നേറ്റത്തിന് സഹായിക്കട്ടെയെന്ന് ഹൃദയപൂർവ്വം ആഗ്രഹിക്കുന്നു. ഈ സംരംഭത്തിന് എല്ലാവിധ ആശംസകളും നേരുന്നു.

ശ്രീമതി പുഷ്പ കെ.വി.

ജില്ലാ വിദ്യാഭ്യാസ ഉപഡയറക്ടർ

കാസർകോട്

ആമുഖം

കോവിഡ്-19 ഏറ്റവും ബാധിച്ച മേഖലയാണ് വിദ്യാഭ്യാസം. കുട്ടിയുടെ സമഗ്രവികസനത്തിന് സാധ്യമാകുംവിധം വിദ്യാഭ്യാസ പ്രവർത്തനങ്ങളെ ആസൂത്രണം ചെയ്യാനും നടപ്പിലാക്കാനും കഴിയാതെപോയ രണ്ടുവർഷക്കാലമാണ് കടന്നുപോയത്. ലോകത്തിന്റെ വിവിധ പ്രദേശങ്ങളിൽ വിദ്യാഭ്യാസ ബദലുകൾ ഉണ്ടായി. ഓൺലൈൻ സംവിധാനങ്ങളുടെ സമഗ്രസാധ്യതകളും പരമാവധി പ്രയോജനപ്പെടുത്തിക്കൊണ്ട് മുന്നേറാൻ കേരളത്തിന് കഴിഞ്ഞിട്ടുണ്ട്. അധ്യാപകരാൽ നിയന്ത്രിക്കപ്പെടുന്ന ക്ലാസ്റൂം അനുഭവങ്ങൾക്ക് പകരമാവില്ല ഒന്നും എന്ന തിരിച്ചറിവ് വിദ്യാഭ്യാസത്തെ ഒരു സാംസ്കാരിക പ്രവർത്തനമായി കാണുന്ന പ്രബുദ്ധ കേരളത്തിനുണ്ട്. ആത്മവിശ്വാസത്തോടെ പഠനപ്രവർത്തനങ്ങളിൽ ഏർപ്പെടാനും പരീക്ഷകളെ അഭിമുഖീകരിക്കാനും നമ്മുടെ വിദ്യാർത്ഥികൾക്ക് സാധിക്കുന്നില്ല എന്ന് പഠനങ്ങൾ പറയുന്നു. മാർച്ച്, ഏപ്രിൽ മാസങ്ങളിൽ നടക്കുന്ന എസ്.എൽ.എൽ.സി. പരീക്ഷയെ നേരിടാനും ഗുണമേന്മയുള്ള പരീക്ഷാഫലം ഉറപ്പാക്കാനും ലക്ഷ്യമിട്ടുകൊണ്ട് കാസർഗോഡ് ഡയറ്റ് നടപ്പിലാക്കുന്ന പദ്ധതിയാണ് **EQUIP**.

ഇതൊരു റിവിഷൻ സാമഗ്രിയാണ്. കഴിഞ്ഞ അഞ്ചുവർഷക്കാലം കാസർകോട് ജില്ലയിൽ പത്താംതരം പരീക്ഷാ ഫലത്തിൽ കുറവുകാണിച്ച ആറ് വിഷയങ്ങൾക്കാണ് സാമഗ്രി തയ്യാറാക്കിയിട്ടുള്ളത്. ഇംഗ്ലീഷ്, ഭൗതികശാസ്ത്രം, രസതന്ത്രം, ജീവശാസ്ത്രം, സാമൂഹ്യശാസ്ത്രം, ഗണിതശാസ്ത്രം എന്നീ വിഷയങ്ങളെ അടിസ്ഥാനമാക്കി തയ്യാറാക്കിയ മാതൃകാ ചോദ്യബാങ്ക് കുട്ടികൾക്ക് ഏറെ സഹായകമാകും. സമർപ്പിത ചേതസ്സുകളായ എല്ലാ അധ്യാപകരുടെയും സഹകരണം പ്രതീക്ഷിക്കുന്നു.

ആശംസകളോടെ

ഡോ. എം. ബാലൻ

പ്രിൻസിപ്പാൾ, ഡയറ്റ് കാസർകോട്

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ENGLISH

SSLC EXAMINATION - MARCH 2022

EQUIP - MODEL QUESTION PAPER - SET 2

TIME : 2½ Hrs.   **TOTAL SCORE : 80**

ENGLISH

Instructions :

• There is a cool-off time of 15 minutes in addition to the writing time of 2½ hours.

• Read the questions carefully before answering.

• Certain questions have choices. Follow the choice regulations.

• When you select a question, all its sub questions (if any) must be answered from the same question itself.

PART I

Answer any four questions from 1 to 6. Each carries one score.   **(4*1=4)**

A.   **Read the following passage from the story, 'The Scholarship Jacket' and answer the questions that follow.**

In May, close to graduation, spring fever had struck as usual with a vengeance. No one paid any attention in class; instead we stared out of the windows and at each other wanting to speed up the last few weeks of school. I despaired every time I looked in the mirror. Pencil thin, not a curve anywhere. I was called 'beanpole' and 'string bean' and I knew that's what I looked like. That really wasn't much for a fourteen-year-old to work with, I thought, as I absent mindedly wandered from my history class to the gym.   Another hour of sweating in basketball and displaying my toothpick legs was coming up. Then I remembered my P.E shorts were still in a bag under my desk where I'd forgotten them.

1) Why didn't the students pay attention in the class?

2) Why did the narrator feel despaired?

3) What was the narrator called by others?

15

4)   Why was the narrator called as 'string bean'?

5)   'That really wasn't much for fourteen-year old to work with'. What does the narrator mean by this?

6.)   Pick out the word from the passage which means 'to lose hope'.

B. Answer all questions from 7 to 10. Each carries one score.   (4*1= 4)

Read the lines taken from the poem, 'Poetry' and answer the questions that follow.

> And it was at that age..........Poetry arrived
>
> in search of me.
>
> I don't know, I don't know
>
> where it came from, from winter or a river.
>
> I don't know how or when,
>
> no they were not voices, they were not
>
> words, nor silence,
>
> but from a street I was summoned,
>
> from the branches of night
>
> abruptly from the others,
>
> among violent fires
>
> or returning alone,
>
> there I was without a face
>
> and it touched me.

7)   'Poetry arrived in search of me' is an example for .... (simile, metaphor, allusion, personification)

8)   What happened to the poet when poetry arrived?

9)   Bring out the contrast between winter and river.

10)   Pick out an example of visual image from these lines.

16

A. Answer any three questions from 11 to 15. Each carries 2 scores.   (3*2=6)

Read the following lines from the poem, 'Ballad of Father Gilligan' and answer the questions that follow.

> The old priest Peter Gilligan
>
> was weary night and day
>
> for half his flock were in their beds
>
> Or under green sods lay
>
>> Once, while he nodded in a chair
>>
>> At the moth-hour of the eve
>>
>> Another poor man sent for him,
>>
>> And he began to grieve.
>
> I have no rest, nor joy, nor peace,
>
> For people die and die;
>
> And after cried he, 'God forgive!
>
> my body spake not I!'

11)   Why was the priest weary night and day?

12)   Why do you think, the time is called 'moth - hour'?

13)   The priest was overburdened with his religious duties. Pick out the line in support of this statement.

14)   Why did the priest beg for God's forgiveness?

15)   What is the rhyme scheme used in the first stanza? Pick out a pair of rhyming words?

B Answer any two questions from 16 to 18. Each carries 2 scores.   (2*2=4)

Read the following extract from the one act play, 'The Never Never Nest' and answer the questions that follow.

Aunt Jane (relenting a little) : Now I am sorry if I sounded rude. But really I am shocked to find the way you are living. I have never owned a penny in my life-cash down, that's my motto and I want you to do the same. (She opens her handbag) Now look here is a little cheque. I was meaning to give you, anyway. (She hands it to Jill). Suppose you take it and pay off just one of your bills - so that you can say one thing at least really belongs to you.

Jill (awkwardly)   : Er. Thank you Aunt Jane. It's very nice of you.

Aunt Jane   : (patting her arm): There ! Now I must be going.

Jack   : I will see you to the bus anyway.

Jill   : Good bye, Aunt Jane and thanks so much for the present.

Aunt Jane (kissing her): Good bye, my dear. (She and Jack go out. Jill looks at the cheque and exclaims "Ten pounds" Then she hurries to the table. Addresses an envelope, endorses the cheque and slips it inside with a bill which she takes from the bag and seals the envelope. The she rings the bell in a moment. The NURSE comes in with the baby in her arms).

16)   Why was Aunt Jane shocked to find the way they were living?

17)   'I want you to do the same'. What did Aunt Jane want them to do?

18)   Why does Aunt Jane advise Jill to pay off just one of her bills?

PART III

A. Answer any three questions from 19 to 23. Each question carries 4 scores.

(3x4 = 12)

19. Complete the following passage using the appropriate phrasal verbs given in the bracket.

The Homeopath decided to ....(a).......all his duties for the next day and ....(b).......... a new house for rent. Actually, he wasn't able to ....(c)...... the experience he had. Feeling sleepy, he set the alarm before going to bed, because he wanted to ....(d)......... early in the morning.

(look for, get up, put off, get over)

20. **Fill in the blanks with suitable words given below.**

In Bharat Circus, usually the tiger was accompanied………(a)…… Mr. Thorat. But, it could not be allowed in shooting. So, Mr. Thorat said……(b)….. he would tie a thin wire ………(c)……. the neck of the tiger. But, Mr. Ray suggested to attach the wire to a collar made ………(d)……… tiger skin to facilitate the shooting.

(around, by, of, for, that)

21. **Complete the following conversation between Adichie and her roommate.**

Roommate	:	You are an African,.........(a)….........?
Aidchie	:	Yes, I am. I come from Nigeria.
Roommate	:	.................(b).............................?
Adichie	:	It's because we use English as our official language

Roommate	:	....................(c)...........................?
Aidchie	:	Yes, I am. But, I like Mariah Carey the most.
Roommate	:	The more I know about you,............(d)...............

22. There are a few errors in the passage given below. Edit the errors appropriately.

Mr. Cronin <u>think</u> about the paltry sum he had given to the young man. It was only seven pounds and ten shillings. It helped to <u>bringing the</u> man back to a new life. He recognised that is was <u>a</u> best investment he had ever <u>maid</u> in his life.

23. Go through the given sentences and their corresponding sentence pattern.

Write four other sentences in the same pattern.

1.	Jill smiled.	S+V
2.	Jack bought a car.	S+V+O
3.	Aunt Jane gave her a cheque.	S+V+O+O
4.	She advised them well.	S+V+O+A

B. Answer any one question from 24 to 25. Each carries 4 scores. (1*4 = 4)

24. **Read the passage given below and answer the questions that follow.**

The world appears to be gloomy in the absence of true friend. Man, by nature, is a social animal. A man, who lives alone, is either an angel or a beast. Therefore, the need for a true and honest friend is always important for man. True friends, no doubt, are rare in this world. A friend is the elixir of life and panacea for many ills. A friend is very useful at the time of adversity. But there are many persons in this world who are fair weather friends. When one's purse jingles with money, they flock around him; otherwise, run away. I would always like to have friends who possess qualities of both the head and heart. Do you have any one such friend?

a) When does the world appear to be gloomy?

b) Why does a true friend become important?

c) What does the phrase 'fair weather friends' mean?

d) Why should a friend possess the qualities of the 'head and the heart'?

25. **Study the table and answer the questions that follow.**

Film	Year	Production	Actor
Here comes the Navy	1934	Warner Brothers	Lou Edelman
Lost Horizon	1937	Columbia	Frank Capra
One Foot in Heaven	1941	Warner Brothers	H&B Wallis
The Snake Pit	1948	20th Century Fox	Robert Bassier
Roman Holiday	1953	Paramount	George Stevens

a) Which production house launched the movie Lost Horizon?

b) Which movies are to the credit of Warner Bothers?

c) Which movie was made in the year 1948 among the above?

d) When was the movie, 'Here comes the Navy' made?

PART IV

A. Answer any three questions from 26 to 29. Each question carries 6 scores.

(3*6= 18)

26. Read the lines from the poem, "Mother to Son" and prepare a note of **appreciation** focusing on its theme, imagery and other poetic devices.

> Well, son, I'll tell you:
>
> Life for me ain't been no crystal stair
>
> It's had tacks in it,
>
> And splinters,

And boards torn up,

And places with no carpet on the floor-

Bare.

But all the time

I'se been a -climbin' on,

And reachin' landin's,

And turnin' corners,

And sometimes goin' in the dark

where there ain't been no light

So, boy, don't you turn back.......

27. Adichie's visit to Fide's family was a great learning experience for her. After reaching home, she jots down her feelings in her diary. Write the likely **Diary** entry.

28. Imagine that you are a news reporter of English daily. Prepare a **News Report** on the first attempt of shooting the scenes with a tiger for Satyajith Ray's film, Goopy Gyne Bagha Byne at Notun Gram.

29. Imagine that you got an opportunity to interview Martha, who won the scholarship jacket. Prepare **six questions** for the same.

B. Answer any two questions from 30 to 32. Each carries 6 scores.   (2*6=12)

30. The English club of your school has decided to stage the one act play, The Never Never Nest'. Being the convener of the club you are asked to prepare a notice. Attempt the likely **notice**.

31. Imagine Ali meets the junk collector the next day and enquires about his lost shoes. Prepare the likely **conversation** between Ali and the junk collector. **(6 exchanges)**

32. Write a short profile of Anton Chekhov using the hints given below.

Full Name : Anton Pavlovich Chekhov

Birth : 29 January 1860, Taganrog, Southern Russia

Parents : Pavel Chekhov and Yevgoniya

Schooling : Greek School in Taganrog Gymnasium

Medical Studies : I.M. Sechenov First Moscow State Medical Univeristy

Profession : Physician

Famous as : master of modern short stories.

Notable works : The Seagull, The Cherry Orchard, Ward Number Six, Uncle Vanya, Three Sisters

Award : Pushkin Prize

Death : 15 July 1904, Badenweiler, Germany

PART V

A. Answer any two questions from 33-35. Each carries 8 scores.   (2*8 = 16)

33. The strange case of the grey squirrel and the white rat astonished the young boy very much. He started wondering about nature and its ways. Imagine he narrates the wonderful experiences he had on his favourite place, the banyan tree. Write the likely **narrative.**

34. Adolescence is a very important stage in the life of an individual. Do you agree? Support your views through a **speech** on the above topic to be delivered in the school assembly, based on the story The Best Investment I Ever Made, in which Mr. and Mrs. John had been guiding the derelict adolescents.

35. The homeopath was haunted by the encounter he had with the snake for many days to come. Imagine he recollects his ordeal as a narrative with one of his friends. Attempt the likely **narrative.**

Answers - Set 2

1) The students paid no attention in the class because it was the month of May, close to graduation.

2) Martha despaired because every time she looked in the mirror, she felt that she was not at all pretty to look at.

3) She was called 'bean pole' and 'String bean'.

4) She was pencil thin, having not a curve anywhere in the body.

5) Her physical growth.

6) Despair

7) Personification

8) When Poetry arrived, something started in his soul like a fever.

9) In winter, everything is frozen and lifeless whereas river represents the flow of life.

10) Violent fires/river.

11) The Priest was weary night and day as he was busy attending the people of his parish. They were either in bed or dead due to an epidemic.

12) The time is called 'moth-hour' because people used to predict time based on the changes in nature.

13) I've no rest, nor joy, nor peace

    for people die and die.

14) He seeks God's forgiveness because he feels guilty of himself for making such irresponsible utterances.

15) abcb

    day-lay/eve-grieve/die -I

16)   Aunt Jane was shocked to find the way Jack and Jill were living because they were leading a luxurious life by borrowing everything through the instalment scheme.

17)   Aunt Jane wanted them to follow her motto 'cash down' that cash should be paid while purchasing something.

18)   Aunt Jane advises to pay off one of her bills so that she can say one thing at least really belongs to her.

19)   a) put off

b) look for

c) get over

d) get up

20)   a) by

b) that

c) around

d) of

21)   a) aren't you ?

b) How do you speak English so well?

c) Can you sing tribal music?

d) the more confused I am.

22)   a) thought

b) bring

c) the

d) made

23)   (a) Ramu runs.

(b) Madhu likes chocolates.

(c) My friend gave me a pen.

(d) The boy played the guitar beautifully.

24)   a) The world appears to be gloomy in the absence of a true friend.

b) A man, who lives alone, is either an angel or a beast and needs to be loved, advised or controlled.

c) A friend who cannot be relied /not a good friend / any sensible answer.

d) A friend should possess the qualities of wisdom and empathy to guide a person.

25)   a) Columbia

b) Here comes the Navy and One Foot in Heaven

c) The Snake Pit

d) One Foot in Heaven

26)   Mother to son - An appreciation.

‘Mother to son’ is a straight forward and politically relevant poem, written by Langston Hughes. It is structured in the form of a conversation between a mother and her son. The mother advises her son that he will face many adversities in life, all of which he must overcome and keep going. The poet uses the ‘stair-way’ as a metaphor to represent life. The mother, to whom life has not been kind, reminds her son that life is not a crystal stair. Rather it was quite tough with ‘tacks and splinters’ in it. She says ‘I’ se been a climbin’ on’. She encourages her son by giving examples of her own perseverance.

The poet wishes to convey that one has to display steady persistence to go up the stairway of life. Obstacles may be harsh but one has to move on with patience. The brilliant use of imagery helps the readers to understand the message of the poem. To the African – Americans, the stair-way could be seen as path to their liberation and freedom. The descriptive tone in which the mother expresses her progress up the stairway helps the reader to visualize what she would have endured in her life time.

The poem is written in free verse and has a lyrical quality. It is a monologue written in Afro-American dialect which gives it a colloquial touch. The poem symbolizes the racial oppression suffered by the black people in America. This experience is passed on to the younger generation. Although the poem is an Afro - American mother's advice to her son, it has a universal appeal also. Hughes conveys 'the idea of hope through the poem'.

27)   Diary

10 March 2022

Monday

What a fool I was! I thought poor people like Fide and his family had nothing but poverty. Today I realised that my idea was utterly wrong. Poor may lack comforts and luxuries in life. But, they are rich in many other aspects of life. At Fide's home I could find that in creativity and craftsmanship, they are equal or better than others. What a beautiful basket they have made! In their expertise even raffia strings became beautiful patterned baskets. I couldn't believe that it was made by his brother. I had only a single idea about Fide. A wrong idea or having a single idea about a person will lead us to misunderstanding. Thank God I could visit Fide's family today. So I could realise my mistake. The visit to his house has taught me a great lesson - to have a single story about anybody or anything is dangerous. We remain ignorant about many things around us if we believe that the single story about anything is the only story. Today I realised that single idea about anything is not wrong but they are incomplete.

28) A Tiger Leap Shatters Shoot

Notun Gram, Feb 12 : The shooting location of Satyajith Ray's film 'Goopy Gyne Bagha Byne' offered the villagers a free and spectacular show by a tiger from Bharath Circus, yesterday. There is a scene in which heroes of the film Goopy and Bagha meet a tiger in the forest. To get it filmed, a well fed and robust tiger from the Bharat Circus was brought to the shooting location. When the trainer opened its cage, the ferocious animal suddenly turned violent and charged at the spectators.

Mr. Thorat, the pathetically helpless trainer, could not bring it under control even though he made many strenuous attempts. After a while, the tiger became calm and Mr. Ray and his crew managed to take their required shots successfully. When asked about the incident, Mr. Ray expressed his relief and said, "We were very much frightened and disappointed at the unexpected behavior of the tiger. We had to take much pain to get hold of a tiger and bring it to the shooting location. For a while we thought all our efforts went in vain. Anyhow, we managed to take the shots and we will see the quality of the pictures once we reach back to Kolkata".

29)

   1) How did you maintain the first rank in all the classes?

   2) How much time in a day do you spend for studies?

   3) What time of a day is best for studies in your opinion?

   4) Who inspired you in studies?

   5) Who supported you in your achievement?

   6) Do you dedicate this achievement to anyone?

30.

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NOTICE

ABC SCHOOL, KASARAGOD

ENGLISH CLUB

</div>

Dear friends,

    Drama is something that everyone likes. To fulfill the wish of many, The English Club of our school has decided to stage the play, 'The Never Never Nest' in the school Auditorium on 16th March 2022 at 10.00 a.m.

    Do join us in time……….

     All are invited.

<div align="right">

Convener

</div>

Texas   Sd/

06.03.2022   English Club

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Programme Details

</div>

    Prayer

    Welcome Speech

    Inauguration

    Presidential address

    On Stage Performance – The Never Never Nest

</div>

31) Ali   : Uncle, I think you collect junk from Akbar Aqa's shop, don't you?

     Junk Collector   : Yes. I do it regularly.

     Ali   : Did you find a pair of shoes yesterday among the rags? Actually, I lost my sister's shoes yesterday.

     Junk Collector   : Is it? I don't remember exactly. Did I pick it up?

     Ali   : Yes, I think so since you had come near Akbar Aqa's shop when I was there.

     Junk Collector   : Where had you kept the shoes?

     Ali   : Among the pile of boxes.

     Junk Collector   : Then, I might have picked them up. But, I usually dump the waste in the processing area.

     Ali   : Ok. Where is the processing area?

     Junk Collector   : It is near the ground, just a kilometer away from here.

     Ali   : Ok, Uncle. Do I have any chance of getting them back. My sister doesn't have any other pair of shoes either.

     Junk Collector   : Oh! Really. Let me see. I can't assure you but we can try.

32)   ANTON CHEKHOV

One of the most famous Russian writers, Anton Pavlovich Chekhov was born on 29 January in the year 1868 at Taganrog in Southern Russia. He was a physician by profession but has made a name for himself in the world of writings as a master of modern short stories. His parents are Pavel Chekhov and Yevgoniya. Having been schooled at Greek School in Taganrog Gymnasium, he continued his studies at I.M. Sechenov, the first Moscow State Medical University and graduated as a doctor. He has enriched the world of literature with some outstanding writings. His notable works include the Seagull, The Cherry Orchard, Ward Number Six, Uncle Vanya and Three Sisters. Even the world recognised his efforts and awarded him the prestigious Pushkin Prize. But, the world of literature lost this eminent soul in the year 1904 on July 15 when he left all of us as he is reported to have died at Badenweiler, Germany. No matter whatsoever, we remember Chekhov as a prolific writer.

33)   Narrative - Nature and its Wonders

Nature and its ways are truly wonderful. Even though I was aware of it, having hands on experience is what brings a world of difference in our thought process.

My banyan tree also gave me a similar experience. It was my domain as compared to the house that belonged to my grandfather. I had made a small platform

mid way up the tree. Moreover, the cushions made me feel comfortable too, when I went through my set of books like The Treasure Island and others.

The tree was in fact a second home for me and umpteen other beings that were the usual visitors to my banyan tree. The first among them was a squirrel which didn't bother to befriend me. The birds also made the place lively during the fig season. All this made it a busy location as well. This in turn made me wonder whether a tree could give such an opportunity to all. But it was a reality and I felt it. Although there was a harmony all over, yet the fight between the two, the cobra and the mongoose was a proof of the existing rivalry or the rule that decides the supremacy in nature. Ultimately, the mongoose won but it showed that nature gives a chance to balance as well.

But, the truly astonishing aspect was the strange case of the grey squirrel and the white rat. I had only seen white rats and to my astonishment, here I came across three white baby squirrels. Even my grandfather hadn't seen such white squirrels. He was amazed too. Hence, the only inference we could finally make was that this nature is full of wonders and we as humble beings try to live peacefully according to its ways.

In fact nature is one of the biggest gifts of God and we being a part of it have all the reasons to wonder about it no matter whatsoever.

34)   Speech - Adolescence - A Crucial Stage

Respected Headmaster, teachers and my dear friends, today I stand before you to speak on a very important topic. Yes. It is none other than the very stage of our life that some of us are in. Any guesses? Let me tell you. I am going to speak on Adolescence, a very important stage of life.

As all of you know, we are in a very important juncture of our lives. Yes, Adolescence in fact is the most significant phase of one's life. This is the age that makes or breaks an individual. Everything begins when we enter the teenage, trying to find an identity in this huge world. Most often we try to establish ourselves among others either by imitating or by doing something different. But, sometimes these times become quite crucial in the long run. The highly unstable mind at this stage makes us fall prey to even some unlawful or illegal means. It is the fault of the age. So it becomes obvious that we need to control our mind and accordingly the body, thereby the habits. Whenever we think about the bad habits that an adolescent falls into, drug addition, betting, alcoholism etc come to our mind. Now why do we develop such habits? It is a grave issue. These are the important times of life when we nurture the dreams of our lives. If we are able to judge things ethically, we may not indulge ourselves into unlawful means. Discretion of right and wrong becomes a mandatory trait at such a stage. The clear knowledge of the anti social elements and its consequences could guide us on the right path on the way to a glorious future.

So, I would like to plead with each one of you to ponder over this issue very seriously, since we are the future citizens of this country. It is our responsibility to

secure our future in turn to secure the future of this world. This world would definitely be a happy dwelling place for all, when an adolescent imbibes the importance of his life.

I truly believe that adolescence is the most important stage in the life of an individual. With these words, I would like to conclude my speech. Thank you one and all.

35.   Narrative - The Homeopath's Ordeal

Every incident that happens in our life may have some lasting impact in one way or the other. Here too, I had one such experience which I won't like to have ever after.

It was just one such hot summer night. As usual, I had my dinner at a nearby restaurant and returned to my room, the rented one. Since it was not electrified, I had to bear the hot climate. So I changed my clothes and opened the windows to have some fresh air but even the wind gods seemed to have taken time off. Eventually, I went out to have some fresh air.

In those days, my earnings were meagre and I didn't possess many things either. My belongings were just limited to a suitcase with sixty rupees and a few dhothis and shirts, a black coat other than the not so yellow vest that I was wearning then.

Unable to sleep, I took out my book, The Materia Medica and started reading when I happened to see myself in the mirror kept over there. I, being an admirer of

beauty, obviously found myself quite handsome. I decided to shave daily and sport a thin moustache and also have a neat parting to make myself an eligible bachelor because I want to marry a woman doctor with a lot of money and good practice. All this while, the regular traffic of rats was on as usual which I didn't bother much because we shared the room anyway.

But, meanwhile there was a thud and when I turned I found a full blooded cobra face to face. I was just four inches away. I felt it was my end. Death was so near me. Literally, I was a stone image. The snake had coiled round my arm. So, I stayed as it is, because I knew if I moved it could be deadly. I stayed still and felt the presence of God.

But all of a sudden things changed for the better. The snake saw itself in the mirror. I felt that it was admiring its own beauty, planning to look more appealing. Whatever it may be, to my surprise the snake slowly slithered and moved away.

Suddenly, I was a man of flesh and blood. I got up and ran for my life into the veranda. I didn't stop and went straight to my friend's house, smeared oil and took a bath.

I don't want to recollect those times any day again. In fact, that ordeal still haunts me and will do so for a long time to come.

****

SSLC EXAMINATION - MARCH 2022
EQUIP - MODEL QUESTION PAPER - SET 3

TIME : 2½ Hrs.　　　　**ENGLISH**　　　　**TOTAL SCORE : 80**

Instructions :

• There is a cool-off time of 15 minutes in addition to the writing time of 2½ hours.

• Read the questions carefully before answering.

• Certain questions have choices. Follow the choice regulations.

• When you select a question, all its sub questions (if any) must be answered from the same question itself.

PART I

A. **Answer any four questions from 1 to 6. Each carries one score.**

(4*1=4)

Read the following passage from the story, 'Adventures in a Banyan tree' and answer the questions that follow.

Though the house and grounds of our home in India were Grandfather's domain, the magnificent old banyan tree was mine-chiefly because Grandfather, at the age of sixty five, could no longer climb it. Grandmother used to tease him about this, and would speak of a certain Countess of Desmond, an English woman who lived to the age of 117 and would have lived longer if she hadn't fallen while climbing an apple tree. The spreading branches of the banyan tree, which curved to the ground and took root again, forming a maze of arches, gave me endless pleasure. The tree was older than the house, older than Grandfather, as old as the town of Dehra, nestling in a valley at the foot of the Himalayas.

1. What was the narrator's domain?
2. How did the Grandmother tease the Grandfather?
3. What happened to the Countess of Desmond?
4. What gave the narrator immense happiness?
5. Which word in the passage means 'kingdom'?
6. Which sentence in the passage gives you the hint about the age of the tree?

B. Answer all questions from 7 to 10. Each carries one score. **(4*1= 4)**

Read the lines taken from the song 'Blowin' in the Wind' and answer the questions that follow.

>   Yes, and how many years can a mountain exist
>   Before it is washed to the sea ?
>   Yes, and how many years can some people exist
>   Before they are allowed to be free ?
>   Yes, and how many times can a man turn his head
>   And pretend that he just doesn't see ?
>   The answer, my friend, is blowin' in the wind.
>   The answer is blowin' in the wind.

7.   Who are the 'people' referred to in these lines?

8.   Pick out an example for alliteration?

9.   What does the 'mountain' indicate?

10. What attitude of the common people is referred to in the refrain, 'The answer, my friend, is blowin' in the wind'?

PART II

A. Answer any three questions from 11 to 15. Each carries 2 scores. **(3*2=6)**

Read the following lines from the poem, 'Mother to Son' and answer the questions that follow.

>   But all the time
>   I'se been a - climbin' on,
>   And reachin' landin's,
>   And turnin' corners,
>   And sometimes goin' in the dark
>   Where there ain't been no light
>   So, boy, don't you turn back.
>   Don't you set down on the steps,
>   'Cause you finds it's kinder hard

Don't you fall now-

For I'se still goin', honey,

I'se still climbin',

And life for me ain't been no crystal stair.

11.   Pick out any two lines that show the speaker did not give up?

12.   What does 'reachin' landin's' and 'turnin' corners' symbolise in the speaker's life?

13.   What does 'dark times' suggest here? Quote the line.

14.   'Life for me ain't been no crystal stair'. Describe the phrase 'no crystal stair'.

15.   What advice does the speaker give to the listener?

B Answer any two questions from 16 to 18. Each carries 2 scores.   (2*2=4)

Read the following passage from the story, 'Vanka' and answer the questions that follow.

'Nine year old Vanka Zhukov, who had been apprenticed three months ago to Alyakhin the shoemaker, did not go to bed on Christmas eve. He waited till his master and mistress and the senior apprentices had gone to church, and then took from the cupboard a bottle of ink and a pen with a rusty nib, spread out a crumpled sheet of paper, and was all ready to write. Before tracing the first letter, he glanced several times anxiously at the door and window, peered at the dark icon, with shelves holding cobbler's lasts stretching on either side of it, and gave a quivering sigh. The paper lay on the bench, and Vanka knelt on the floor at the bench'.

16.   What do you know about Vanka?

17.   Why did Vanka wait for his master to go out? What did he do then?

18.   What did the little boy do before tracing the first letter?

PART III

A. Answer any three questions from 19 to 23. Each question carries 4 scores.

(3x4 = 12)

19. Complete the following passage using the appropriate phrasal verbs given in the bracket.

The homeopath ....(a)......... at the police station to give a complaint. There he seemed ....(b)……… finding the officer who happened to be one of his childhood friends. He promised the homeopath to........(c)......... the matter and ....(d)........... talking about their school days.

(went on, turned up, taken aback, look into)

20. **There are a few errors in the passage given below. Edit the errors appropriately.**

The landlady <u>show</u> the sergeant and the doctor the little attic <u>when</u> lay the body of a young man. He was <u>apparent</u> lifeless. They began the work of <u>bring</u> him back to life.

21. **Fill in the blanks with suitable words given below.**

One day, Martha had ....(a)........ go back to the classroom to take her PE shorts. She halted at the door hearing her teachers arguing with each other ....(b)..........the room. In fact they were talking ....(c).......her. She was shocked to hear it ....(d)........stood there learning against the wall.

(about, in, and, but, to)

22. **Complete the following conversation between Adichie and Fide.**

Adichie   : This is a wonderful piece of art, ...(a)..............?

Fide   : Yes. I think so.

Adichie   : ....(b).............................?

Fide	: My brother made it.
Adichie	: ....(c)..................................?
Fide	: No. It is made of dried raffia leaves.
Adichie	: Will he sell it?
Fide	: Sure. If you like it, ...(d)......................

23. **Examine the following word pyramid and construct a similar word pyramid with the word, 'garden'.**

Room

A room

A rented room

A small rented room

A small rented room where I lived

B.   Answer any one question from 24 to 25. Each carries 4 scores. (1*4 = 4)

24. **Read the passage given below and answer the questions that follow.**

Sarah was hoping to get the lead role in the upcoming school play. Last year she played the role of Dharma in the school's production of 'My Favourite Day'. The audience loved her performance. She received a huge round of applause at the end of every performance.

This year the school will be putting on a production called 'My Crazy week'. Sarah began to practice her lines three times a day for four weeks before auditions. The week before the audition she began to practice with two friends. Sarah practiced the part of Jane, Mike practiced the part of James and Amanda practiced the part of Teresa.

When the auditions started Sarah did an excellent job! Her outstanding performance won her the role of Jane. As soon as she learned that she won the part, she ran home to practice for opening night.

a)   What is the name of the play in which Sarah acted as Dharma?

b)   How long did Sarah practice her lines?

c)   What aspect of Sarah's character is being revealed in the passage?

d)   What did she do as soon as she knew that she had won the part?

25. **Study the table and answer the questions that follow.**

International Cricket Matches – 2020

Country	Test Match	ODI	T20
India	15	30	25
Australia	18	24	22
England	16	28	20
Sri Lanka	15	26	27
Pakistan	12	22	25

a) Which country played the maximum number of ODI's?

b) What is the similarity in the statistics with respect to Test matches played by India and Sri Lanka?

c) Identify the European country among the above.

d) Which are the neighbouring countries of India that are enlisted in the given table?

PART IV

A. Answer any three questions from 26 to 29. Each question carries 6 scores.

(3*6= 18)

26. Mr. John in the story 'The Best Investment I Ever Made', writes a letter to his friend describing the experience that he had with the doctor on the voyage. Write the likely **letter**.

27. Martha in the story 'The scholarship Jacket' is awarded the scholarship jacket by the Vice Chancellor of the University. Prepare a **News Report** that may appear in the newspaper, the next day.

28. Single stories breed stereotypes. Do you agree? Based on the lesson 'The Danger of a Single Story', prepare a **write up**.

29. Read the lines from the poem "Lines written in Early Spring" and prepare a note of **appreciation** focusing on its theme, imagery and other poetic devices.

To her fair works did nature link

The human soul that through me ran;

And much it grieved my heart to think

What man has made of man.

Through primrose tufts, in that green bower,

The periwinkle trailed its wreaths;

And 'tis my faith that every flower

Enjoys the air it breathes.

B. Answer any two questions from 30 to 32. Each carries 6 scores.   (2*6=12)

30. Grandfather had a pivotal role in the life of Vanka. Based on the story of 'Vanka', prepare a **character sketch** of the Grandfather.

31. Kiran enquired Nilkanta whether he had taken Sathish's inkstand. Prepare the likely **conversation** between Kiran and Nilkanta. **(6 exchanges)**

32. Write a short **profile** of Rabindranath Tagore using the details given below.

Name	:	Rabindranath Tagore
Born	:	1861 at Kolkata, West Bengal
Spouse	:	Mrinalini Devi
Famous as	:	Author of National Anthem, Novelist, Painter, Playwright, Philosopher, Social reformer, Freedom Fighter etc.
Awards	:	Nobel Prize for literature in 1913 for Gitanjali
Death	:	August 7, 1941 at the age of 80, Kolkata.

PART V

A. Answer any two questions from 33 to 35. Each carries 8 scores. **(2*8= 16)**

33. "Blessed is an individual who has learned to smile away his pain". Prepare a **review** of the story, 'The Snake and the Mirror'.

34. Martha was glad to be honoured with the scholarship jacket by the school authorities. Imagine she delivers her valedictory speech receiving the award formally. Attempt the likely **speech.**

35. The rivalry between the snake and mongoose had a lasting impression on the young boy who watched the fight among them atop the banyan tree. Imagine he narrates the fight scene to one of his friends. Write the likely **narrative.**

ANSWERS – SET 3

1. The banyan tree was the narrator's domain.

2. Grandmother teased the Grandfather telling about his inability to climb trees.

3. Countess of Desmond fell down from the apple tree and died.

4. The spreading branches of the banyan tree which curved to the ground and took root again forming a maze of arches, gave the narrator immense happiness.

5. Domain

6. The tree was older than the house, older than Grandfather, as old as the town of Dehra, nestling in a valley at the foot of the Himalayas.

7. 'People' referred to here are the ones who are denied of their civil rights.

8. Yes, and how <u>m</u>any years can a <u>m</u>ountain exist or Yes, and how <u>m</u>any times can a <u>m</u>an turn his head

9. Mountain stands for the mighty people in power.

10. The indifferent attitude of the people is reflected here.

11. I'se climbin' on /

    I'se still goin' honey /

    I'se still climbin'

12. 'reachin' landin's' symbolizes magical moments and 'turnin' corners' symbolizes failures in life.

13. Unfortunate moments of her life. 'And sometimes goin' in the dark'

14. A crystal stair represents an imaginary path of ease. So, 'no crystal stair' means that the journey of her life was not smooth and comfortable like going up a crystal stair.

15. Not to give up or turn back but move on with patience and confidence.

16. Vanka Zhukov was a nine year old boy who had been apprenticed three months ago to Alyakhin, the shoemaker.

17. He waited till his master and mistress and the senior apprentices had gone to church, and then took from the cupboard a bottle of ink and a pen with a rusty nib, spread out a crumpled sheet of paper, and was all ready to write.

18. Before tracing the first letter, he glanced several times anxiously at the door and windows, peered at the dark icon, with shelves holding cobbler's lasts stretching on either side of it, and gave a quivering sigh.

19. a) turned up

   b) taken aback

   c) look into

   d) went on

20. a) showed

   b) where

   c) apparently

   d) bringing

21. a) to

   b) in

   c) about

   d) and

22. a) isn't it ?

   b) Who made it ?

   c) Is it made of palm leaves ?

   d) you can buy it.

23.   Garden

A garden

A beautiful garden

A small beautiful garden

A small beautiful garden which looks attractive

24.

   a) My favourite day.

   b) Three times a day for four weeks

   c) Her dedication and love towards art.

   d) She ran home to practice for opening night.

46

25. a) India

b) Both have played equal number of test matches.

c) England

d) Sri Lanka and Pakistan

26. Letter

London

3 November 1970

My dear Christy,

How are you? Hope you are fine. After our visit to the settlement houses in the New England States, we are returning to our home land. This time our trip was really fruitful.

I had a great surprise this morning. I found Dr. A.J. Cronin today in the ship. You know my past life. Don't you remember the doctor who saved my life? He appeared before me today morning. I couldn't believe my eyes. He was the man who gave me a second life. He was the one who brought my life back and touched my heart with kindness. But he couldn't recognise me today. When I told him about the past he could recall everything. He was really happy to know about my works. He told me that the money he spent for me was the best investment he had ever made. I longed to meet him for the past twenty five years. Now I am satisfied. I could express my heartfelt gratitude to him.

Next week I plan to meet him again. You can also join us.

With love and warm regards,

Yours John

Sd/-

27. MARTHA WINS TEXAS SCHOOL SCHOLARSHIP JACKET

Texas, 10 February 2022: Martha, an eighth grade student bagged the scholarship jacket of Texas school this year. The scholarship jacket is a prestigious award given every year to the valedictorian as a tradition during the eighth grade graduation. It is a very beautiful green and gold jacket awarded to the student, who gets the highest grade from the first grade to the eighth grade. Martha got a straight A+ average right from her first grade.

The Jacket was awarded to Martha by the Vice-Chancellor of the Texas University in the presence of the school Principal, teachers and students. The teachers praised her skills and added that she was the right model to all the students. 'It is like my dream has come true which, I thought once slipped between the cup and the lip', jubilant Martha said.

28. <u>Single Stories Breed Stereotypes</u>

Single stories are deceptive since they fail to see the complete story. Adichie in her speech shares her personal experiences of how she became a victim of her room- mate's single story of Africans. Her room-mate had very low perception of the potentialities of Africans. She grew up in a world where she was forced to infer that the country Africa has only troubles and turmoils to share with. According to her perception, they aren't skilled enough to fight for and protect their interests. They would be looking for those superior Whites to save them from their eternal doom. This preconceived notion has prevented her from perceiving thousands of other stronger stories that define the very existence of each African. Adichie felt very uncomfortable at her room-mate's perception of her as uncultured and unsophisticated. Adichie herself was biased when she was too young. She too had a single story to share. Her mother would force her to have food pointing at Fide, their domestic help and his family's inability to feed all the members. Hence in her eyes Fide and his family was a picture of suffering. She could never imagine them being happy or skilled.

People tend to form opinions regardless of the existing facts. To them a story lives a thousand lives. Adichie says that sticking to a single story has prevented her room-mate from seeing the truth. She felt alienated from the world and her cultural identity was at stake. She wished to shout to the world that she is not just an African, she is more. Many of us still believe in single stories. They are dangerous because one would never be able to have a clear picture or the true identity.

29.   Lines Written in Early Spring - An Appreciation

"Lines Written in Early Spring" is a poem which celebrates the relation between man and nature. It is written by the most celebrated poet of nature, William Wordsworth. The poet enjoys the sights and sound of nature and at the same time laments on what man has made of man.

The poet declares that man is a part of nature and can never be away from it. The poet personifies nature in these lines. He appreciates nature for her God like abilities of linking human soul to her. But, he also grieves while thinking about how cruelly man has separated himself from Mother Nature. The poet observes nature, at its peak, in all its splendour and beauty. He tells about his dynamic development when he describes how the periwinkle trails its branches through the grass. He feels that the flowers rejoice at their existence. He finds delight in the green bowers and has faith that the beautiful flowers enjoy every ounce of the air they breathe, they are thankful for living in the lap of nature.

The poem becomes much appealing because of the sublimity of its theme and beauty of lines and the abundant use of various poetic devices. The lines follow a rhyme scheme abab with the use of rhyming words like link-think, ran - man, bower - flower and wreaths-breathes. The use of alliteration can be seen in the line 'What man has made of man". "Periwinkle trailed its wreaths" is as example of personification. Tactile image

could be found in the line "And t'is my faith that every flower, Enjoys the air it breathes"
The poem consists of six quatrains.

30. Konstantin Makarich

Konstantin Makarich is the grandfather of Vanka, the protagonist in the story Vanka. He is a night watchman on the estate of Zhivarev. He is a small, lean, old man about sixtyfive years of age. He is remarkably lively and agile with a smiling face and eyes bleary with drink. He is a fun-loving man. In the day time either he sleeps in the back kitchen or spends time cracking jokes with the cooks and other kitchen maids. In the night he does his watchman duty walking round and round the estate, sounding his rattle, wearing a large sheepskin coat and felt boots. He has two dogs named Kashtanka and Eel. He will always be in the company of his beloved dogs. He has the habit of snuffing tobacco and he will offer the snuff to kitchen maids and even to his dogs. He enjoys seeing them sneeze, breaking out into jolly laughter. This grandfather is the only relative of Vanka now remaining in this world for him. When we read about Vanka's miserable plight at Alyakhin's house, we might ask ourselves why this man has sent the boy to such a cruel person. But we cannot blame the old, innocent and illiterate man. We are sure that while sending Vanka to Moscow, he must have in his mind only the thought that his grandchild should learn a trade and earn a living!

31.   Kiran   : Nilu, did you take the inkstand?

Nilkanta   : No. I didn't. Why should I take it?

Kiran   : Nilu, If you have taken it please tell me.

Nilkanta   : I said no.

Kiran   : If you tell me the truth I will stop all others from making any
             further fuss.

Nilkanta	: No one trusts me.
Kiran	: Don't say like that. I have faith in you.
Nilkanta	: You are the only one, who treats me well here.
Kiran	: I have always stood beside you and will do so. But, you have to tell me the truth.
Nilkanta	: What will I do with an inkstand? It is useless for me.
Kiran	:It might be useless for you but it is very dear to Satish.
Nilkanta	: May be.

32.   RABINDRANATH TAGORE

India has been blessed with some of the greatest personalities and one of the names that can never be forgotten is Rabindranath Tagore, a name associated with the hearts of Indians. The honour of having written the national anthem goes to him only. He was not only a poet but also a novelist, painter, playwright, philosopher as well as a social reformer. Being born in pre - independent India, Rabindranath Tagore is also termed as the one who participated actively in the freedom struggle as well. He was born in the year 1861 at Kolkata in West Bengal. His wife's name was Mrinalini Devi. The world of literature was enriched with the thoughts and writings of Tagore. Among his famous compositions, stands Gitanjali that fetched him the prestigious Nobel Prize in literature, which was formally awarded to him in the year 1913 as well. In fact, he was the first non European to achieve that honour. Although the world lost this famous personality on August 7, 1941 at the age of 80, yet the name lives in the hearts forever.

33.   Review of the story 'The Snake and the Mirror'.

The short story, 'The Snake and the Mirror' is written by Vaikom Muhammed Basheer, popularly known as Beypore Sulthan. Basheer is known for his peculiar style and here too it has been emphatically presented. It is a humorous story about a doctor, a snake and a mirror. The narrator of the story is a homeopath. A snake and a mirror are two most important entities in the story. The humorous anecdote revolves around the theme of human vanity and fears and how they affect the people.

The story revolves around the ordeal of the doctor when he comes face to face with a full blooded cobra on a hot summer night. The life of a doctor who had just started his medical practice has been presented humourously. The craft of words make it humorous from beginning to the end and bind the reader. A recollection of an incident which was horrible for the narrator yet makes the reader enjoy the funny aspect within. The use of humour makes the story distinct. Even the style of narration makes one experience the plight of the homeopath on that eventful night. But, his aspirations being a bachelor bring all the difference in the story, when he equates the snake with himself which seems to have taken aback by its own beauty.

Basheer has followed his own innovative style of writing as usual in the story. So obviously, it is a wonderful read. The language used in the story seems simple too. We feel at home when we go through the content. It satisfies the elements of a short story very well too. This is truly a Basheer's masterpiece indeed.

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34.   Speech

Respected dignitaries, Principal, teachers and my dear friends, it is indeed a moment that I will cherish all through my life.

Today I stand before you as a proud winner of the prestigious scholarship jacket. But it is not a mere jacket for me. It is something I have dreamt of since my initial days in

this school; yes my Texas school. In fact, my sister Rosie showed me the way. She inspired me. Her proud possession of a scholarship jacket always motivated me. All the time the green and gold shade of the jacket has fancied me. To be frank, every year I had looked forward to accomplishing the task to maintain a straight A grade to qualify myself and thereby make myself eligible. Eight years of perseverance paved the way. Actually, I am indebted to all who helped me in the course of action.

The scholarship jacket is really a concept that instills a feeling of hard work and dedication for an aspirant. I think such awards should always be promoted. Every child irrespective of any background can aspire to grab it. Since it doesn't differentiate one on the basis of caste, colour or status rather than recognises the efforts of excellence and acknowledges it.

I would like to thank all my teachers, friends and well-wishers who supported me in the time of need even when the things weren't favourable. But, I know challenges make us stronger and the success becomes even sweeter in the event of a few bitter experiences. So, I don't have any complaints. Moreover, I am extremely happy to receive this coveted prize.

So formally on this occasion, I would like to thank all the jury members, the board, my teachers and all the authorities who found me eligible for this award. I shall remember this for my lifetime and hope to justify this award in my future as well.

With these words I would like to conclude my speech.
Thank you.

35. Narrative - The Fight Scene

The fight of the champions always lives up to its expectations and the afternoon of April proved it emphatically before my eyes.

During summers as usual, I was atop the banyan tree either reading books or just passing time in my own way watching things underneath. So it just happened that I saw the two born enemies coming face to face with each other. Won't you like to know who

the enemies were? Yes, they were none other than a huge black cobra and the mongoose. What else could I have expected for! The rivalry between them is known to the world and stood up to its ground as well.

Although the mongoose was just three feet long, it was a superb fighter being clever and aggressive. On the other hand, the cobra was skilful and an experienced fighter as well. He could move swiftly and strike with the speed of light with the sharp fangs full of deadly venom.

The fight started. Both fought intensely. The cobra was hissing and striking and the mongoose in turn was tackling the strike equally well. Meanwhile, I had a company of two new spectators, the myna and the jungle crow. Both were very keen too. Even the combatants were aware of them. The second round followed with the cobra trying to raise three feet above the ground and trying to strike at the mongoose, which jumped and evaded it, in turn biting the snake on the back. A few drops of blood were visible on the cobras back as well. Even in the third round, a similar tussle continued but with a difference. Meanwhile, the cobra struck the jungle crow hurling it away making the myna take all cautions and staying away.

Finally, the mongoose overcame the cobra with all its tactical moves being swift, dragging its opponent into the bushes. The cobra couldn't do much and had to accept the defeat at the end. Even the myna looked too wise to hop away quickly.

At the end it was the grandfather's mongoose, although not tamed by him, that had been victorious in the deadly fight. I had seen my grandfather befriending the mongoose but never knew it was so good at keeping the snakes away. The fight was indeed a fight of the champions and it made my day. I will remember this experience for the rest of my life.

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ഊർജ്ജതന്ത്രം

EQUIP - DIET Kasaragod

SSLC Model Examination March 2022

PHYSICS

Time : 1½ Hrs.   Maximum score : 40

നിർദ്ദേശങ്ങൾ

* 15 മിനിറ്റ് സമാശ്വാസ സമയമാണ്. ഈ സമയം ചോദ്യങ്ങൾ വായിക്കാനും ഉത്തരങ്ങൾ ആസൂത്രണം ചെയ്യാനും ഉപയോഗിക്കണം.

* ഓരോ ചോദ്യവുമായി ബന്ധപ്പെട്ട നിർദ്ദേശങ്ങൾ വായിച്ചു മനസ്സിലാക്കിയതിന് ശേഷം ഉത്തരം എഴുതുക.

* ഉത്തരം എഴുതുവാൻ സ്കോർ, സമയം എന്നിവ പരിഗണിക്കണം.

PART I

A. **1 മുതൽ 6 വരെയുള്ള ചോദ്യങ്ങളിൽ ഏതെങ്കിലും 4 എണ്ണത്തിന് ഉത്തരം എഴുതുക.**

(1 സ്കോർ വീതം)   **(4x1=4)**

1. ശരിയായ ബന്ധം കണ്ടെത്തി എഴുതുക.

   വൈദ്യുത ബൾബ് : പ്രകാശഫലം ; സോൾഡറിംഗ് അയേൺ : ....

2. വൈദ്യുതമോട്ടോറിൽ നടക്കുന്ന ഊർജ്ജ പരിവർത്തനം എഴുതുക.

3. ഇന്ത്യയിൽ ഉൽപാദിപ്പിക്കപ്പെടുന്ന AC യുടെ ആവൃത്തി എത്ര?

4. 48 സെ.മി. വക്രതാ ആരമുള്ള ഒരു കോൺകേവ് ദർപ്പണത്തിന്റെ ഫോക്കസ് ദൂരം എത്രയായിരിക്കും?

5. അപവർത്തന രശ്മി മാധ്യമങ്ങളുടെ വിഭജന തലത്തിന് സമാന്തരമായി സഞ്ചരിക്കുമ്പോൾ അപവർത്തന കോൺ എത്രയായിരിക്കും?

6. കൂട്ടത്തിൽപ്പെടാത്തത് കണ്ടെത്തി കാരണം എഴുതുക?

   (സൗരോർജ്ജം, ഫോസിൽ ഇന്ധനം,

   ജിയോ തെർമൽ ഊർജ്ജം, തിരമാലയിൽ നിന്നുള്ള ഊർജ്ജം)

B **7 മുതൽ 9 വരെയുള്ള ചോദ്യങ്ങൾക്ക് ഉത്തരമെഴുതുക. (1 സ്കോർ വീതം)   (3x1=3)**

7. ന്യൂട്ടന്റെ വർണ്ണ പമ്പരം വേഗത്തിൽ കറക്കുമ്പോൾ കാണപ്പെടുന്ന നിറമേത്? ഇതിന് കാരണമായ കണ്ണിന്റെ പ്രത്യേകത എന്ത്?

8. ഒരു കോൺവെക്സ് ലെൻസ് വസ്തുവിന്റെ അതേ വലുപ്പമുള്ള പ്രതിബിംബം രൂപീകരിക്കുന്നു എങ്കിൽ ആവർധനം എത്ര?

   (+1, -2, -1, +2)

9. ത്രീ പിൻ പ്ലഗിൽ എർത്ത് പിൻ ഉപകരണത്തിന്റെ ഏത് ഭാഗവുമായാണ് ബന്ധിപ്പിക്കേണ്ടത്?

PART II

A. ചുവടെ നൽകിയിരിക്കുന്ന ചോദ്യത്തിന് ഉത്തരം എഴുതുക. (2 സ്കോർ) **(1x2=2)**

10. വൈദ്യുതവാഹിയായ സോളിനോയിഡിന്റെ കാന്തശക്തിയെ സ്വാധീനിക്കുന്ന ഘടകങ്ങൾ ഏവ?

B. **11 മുതൽ 12 വരെയുള്ള ചോദ്യങ്ങളിൽ ഏതെങ്കിലും ഒരെണ്ണത്തിന് ഉത്തരം എഴുതുക.**

(2 സ്കോർ) **(1x2=2)**

11. മഴ പെയ്യുമ്പോൾ മഴത്തുള്ളികൾ തുടർച്ചയായി താഴേക്ക് പതിക്കുമ്പോൾ അത് സ്ഫടിക ദണ്ഡ് പോലെ തോന്നാറുണ്ട്. ഇതിന് കാരണമായ പ്രകാശ പ്രതിഭാസം വിശദീകരിക്കുക?

12. ഒരു ഇന്ധനത്തിന്റെ ''കലോറികമൂല്യം 45000KJ/kg'' ആണ്. ഇതിൽ നിന്നും അർത്ഥമാക്കുന്നതെന്ത്? ഏറ്റവും മികച്ച ഇന്ധനമായി കണക്കാക്കുന്നതിന് വേണ്ട ഏതെങ്കിലും 2 ഗുണങ്ങൾ എഴുതുക.

PART III

A **13 മുതൽ 16 വരെയുള്ള ചോദ്യങ്ങളിൽ ഏതെങ്കിലും 3 എണ്ണത്തിന് ഉത്തരം എഴുതുക.**

(3 സ്കോർ വീതം) **(3x3=9)**

13. സർക്യൂട്ട് നിരീക്ഷിക്കുക
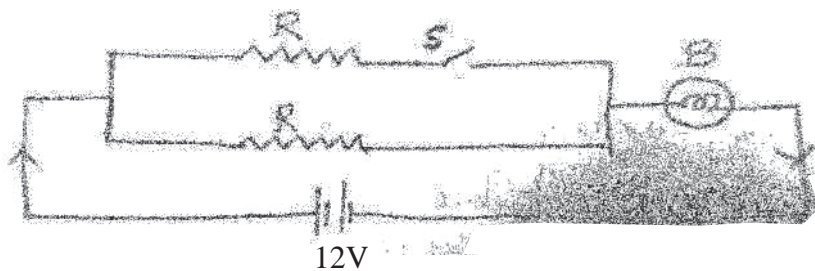
a) സ്വിച്ച് (s) ഓൺ ചെയ്ത അവസരത്തിലും, ഓഫ് ചെയ്ത അവസരത്തിലും ബൾബിന്റെ പ്രകാശത്തിൽ എന്ത് മാറ്റം ഉണ്ടാകും? (1)

b) നിങ്ങളുടെ ഉത്തരം സാധൂകരിക്കുക. (2)

14. ഒരു DC മോട്ടോറിന്റെ ഘടന തന്നിരിക്കുന്നു.
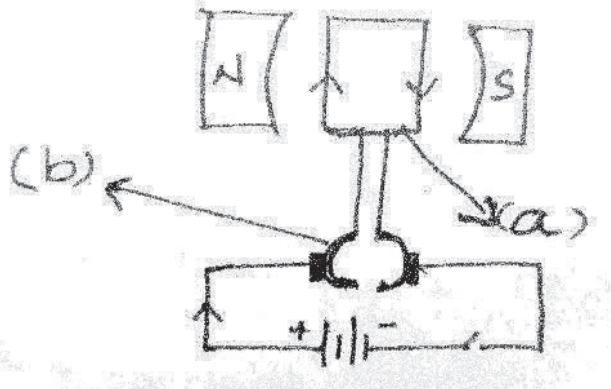
a) ചിത്രത്തിലെ a, b എന്നിങ്ങനെ അടയാളപ്പെടുത്തിയ ഭാഗങ്ങളുടെ പേര് എഴുതുക. (1)

b) (b) എന്ന് അടയാളപ്പെടുത്തിയ ഭാഗത്തിന്റെ ധർമ്മം എന്ത്? (1)

c) ഒരു dc മോട്ടോറും, dc ജനറേറ്ററും തമ്മിലുള്ള പ്രവർത്തനതത്ത്വത്തിലെ വ്യത്യാസം എഴുതുക (1)

15. ചേരുംപടി ചേർക്കുക

A	B
1. ഫ്ളെമിംഗിന്റെ വലതുകൈ നിയമം	a. DC ജനറേറ്റർ
2. സ്ലിപ്പ് റിംഗ്സ്	b. പ്രേരിത വൈദ്യുതിയുടെ ദിശ
3. സ്പ്ലിറ്റ് റിംഗ്സ്	c. ചാലകത്തിന്റെ ചലനദിശ
	d. AC ജനറേറ്റർ

16. താഴെ കൊടുത്ത ചിത്രം നിരീക്ഷിക്കുക.

(ഗ്ലാസിന്റെ ക്രിട്ടിക്കൽ കോൺ അളവ് = 42⁰)
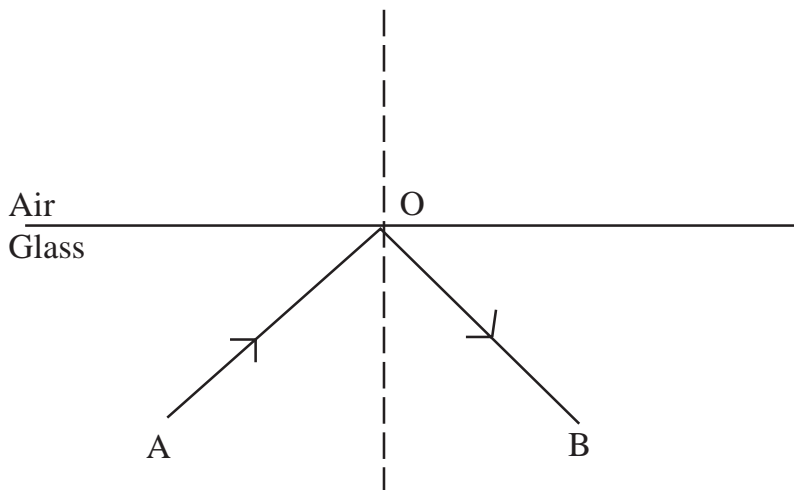
a) ഇവിടെ AO എന്ന പ്രകാശരശ്മിയ്ക്ക് OB എന്ന ദിശയിൽ പ്രതിപതനം സംഭവിച്ചിരിക്കുന്നു. ഇതിന് സഹായകമായ ഒരു സാഹചര്യം എഴുതുക. (1)

b) ഈ പ്രതിഭാസം ഏത് പേരിൽ അറിയപ്പെടുന്നു? (1)

c) പതനകോൺ 42^0 ആയാൽ, അപവർത്തന കോൺ അളവ് എത്രയായിരിക്കും? (1)

B ചുവടെ നൽകിയിരിക്കുന്ന ചോദ്യത്തിന് ഉത്തരം എഴുതുക. (3 സ്കോർ) (1x3=3)

17. a) ഏറ്റവും കൂടുതൽ വീക്ഷണ വിസ്തൃതിയുള്ള ദർപ്പണം താഴെ കൊടുത്തവയിൽ ഏതാണ്?

(കോൺകേവ് ദർപ്പണം, കോൺവെക്സ് ദർപ്പണം, സമതല ദർപ്പണം) (1)

b) താഴെകൊടുത്ത പട്ടിക പൂർത്തീകരിക്കുക.

ദർപ്പണം	പ്രയോജനപ്പെടുത്തി സന്ദർഭം
സമതല ദർപ്പണം	................(a)...............
കോൺകേവ് ദർപ്പണം	................(b)..............

(2)

PART IV

A. 18 മുതൽ 20 വരെയുള്ള ചോദ്യങ്ങളിൽ ഏതെങ്കിലും 2 എണ്ണത്തിന് ഉത്തരം എഴുതുക. (4 സ്കോർ വീതം) (2x4=8)

18. ചിത്രം വിശകലനം ചെയ്ത് പ്രശ്നനിർദ്ധാരണം ചെയ്യുക.
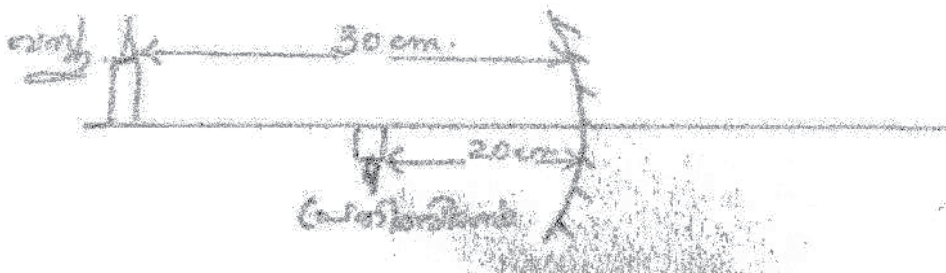
a) ചിത്രത്തിൽ കാണിച്ചിരിക്കുന്ന ദർപ്പണം ഏത്? (1)

b) ലഭ്യമായ പ്രതിബിംബത്തിന്റെ സവിശേഷതകൾ എന്തെല്ലാം? (1)

c) ദർപ്പണത്തിന്റെ ഫോക്കസ് ദൂരം (f) എത്ര? (2)

19. കോൺവെക്സ് ലെൻസിനു മുന്നിൽ വെച്ച വസ്തുവാണ് OB.
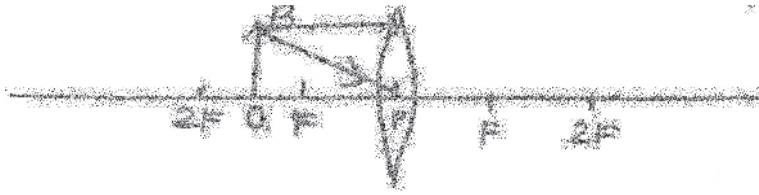
a) പതനരശ്മികളുടെ സഹായത്തോടെ പ്രതിബിംബം രൂപീകരിക്കുക. (2)

b) പ്രതിബിംബത്തിന്റെ 2 സവിശേഷതകൾ എഴുതുക. (2)

20. a) ചിത്രത്തിൽ കാണുന്ന പ്രതിഭാസം ഏതാണ്? (1)
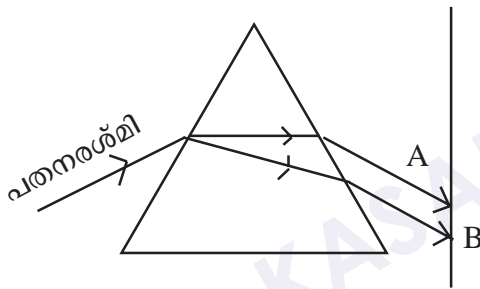
b) ധവളപ്രകാശമാണ് ഇവിടെ പതനരശ്മി എങ്കിൽ,

A = ... ; B = ... വർണ്ണങ്ങളാണ്. (2)

c) പതനരശ്മി പച്ചനിറമാണെങ്കിൽ സ്ക്രീനിൽ ലഭിക്കുന്ന നിറം ഏത്? (1)

B. 21 മുതൽ 22 വരെയുള്ള ചോദ്യങ്ങളിൽ ഏതെങ്കിലും 1 എണ്ണത്തിന് ഉത്തരം എഴുതുക.

(4 സ്കോർ) (1x4=4)

21. വൈദ്യുതിയുടെ പ്രകാശഫലത്തിന് ഉദാഹരണമാണ് വൈദ്യുത ബൾബ്.

a) ബൾബിലെ ഫിലമെന്റ് ആയി ഉപയോഗിക്കുന്ന പദാർത്ഥം ഏത്? (1)

b) ഇതിന്റെ സവിശേഷതകൾ എന്തെല്ലാം? (1)

c) ഇൻകാൻഡസന്റ് ബൾബുകൾക്ക് ക്ഷമത കുറയാൻ കാരണമെന്ത്? (2)

22. പവർ നഷ്ടമില്ലാത്ത ഒരു ട്രാൻസ്ഫോർമറിന്റെ പ്രൈമറിയിൽ 2000 ചുറ്റുകളും സെക്കൻഡറിയിൽ 200 ചുറ്റുകളും ഉണ്ട്. ഇതിന്റെ പ്രൈമറിയിൽ 240V കൊടുത്തപ്പോൾ കറന്റ് 0.5A ആണെങ്കിൽ സെക്കൻഡറിയിൽ വോൾട്ടേജും, സെക്കൻഡറിയിലെ കറന്റും കണക്കാക്കുക.

PART V

A. **23 മുതൽ 24 വരെയുള്ള ചോദ്യങ്ങളിൽ ഏതെങ്കിലും 1 എണ്ണത്തിന് ഉത്തരമെഴുതുക.**

(5 സ്കോർ) (1x5=5)

23. 3Ω, 6Ω പ്രതിരോധമുള്ള പ്രതിരോധകങ്ങൾ, $6V$ ബാറ്ററി, സ്വിച്ച് ഇവ നൽകിയിരിക്കുന്നു.

   a) ഇവയെ ശ്രേണീരീതിയിൽ ബന്ധിപ്പിക്കുന്ന സെർക്കീട്ട് ചിത്രീകരിക്കുക. (1)

   b) ഇവയെ ശ്രേണീരിതിയിൽ ബന്ധിപ്പിച്ചാൽ, സഫല പ്രതിരോധം എത്രയെന്ന് കണ്ടെത്തുക. (1)

   c) അപ്പോൾ സെർക്കീട്ടിലൂടെ പ്രവഹിക്കുന്ന കറന്റ് എത്രയായിരിക്കും? (1)

   d) ഈ പ്രതിരോധകങ്ങൾ സമാന്തര രീതിയിൽ ബന്ധിപ്പിച്ചാൽ, സഫല പ്രതിരോധം എത്രയെന്ന് കണ്ടെത്തുക. (2)

24. പ്രകാശം കടത്തിവിടുന്ന ചില മാധ്യമങ്ങളുടെ പേരുകൾ ബ്രാക്കറ്റിൽ നൽകിയിരിക്കുന്നു.

   (വായു, വജ്രം, ജലം, ഗ്ലാസ്സ്)

   a) ഇതിൽ പ്രകാശികസാന്ദ്രത കൂടിയ മാധ്യമം ഏത്? (1)

   b) ബ്രാക്കറ്റിൽ കൊടുത്തിരിക്കുന്ന മാധ്യമങ്ങളെ പ്രകാശവേഗം കുറഞ്ഞുവരുന്ന ക്രമത്തിൽ എഴുതുക. (2)

   c) പ്രകാശവേഗവും പ്രകാശികസാന്ദ്രതയും തമ്മിലുള്ള ബന്ധം എന്ത്? (1)

   d) പ്രകാശം ജലത്തിൽ നിന്ന് ഗ്ലാസ്സിലേക്ക് കടക്കുമ്പോൾ, പ്രകാശപാതയ് ക്കുണ്ടാകുന്ന മാറ്റം എന്ത്? (1)

PHYSICS - ANSWER KEY - SET 2

Part I

A. 1. താപഫലം

2. വൈദ്യുതോർജ്ജം യാന്ത്രികോർജ്ജമായി മാറുന്നു

3. 50Hz

4. 24cm

5. 90^0

6. ഫോസിൽ ഇന്ധനം, ഫോസിൽ ഇന്ധനം ബ്രൗൺ എനർജിയും മറ്റുള്ളവ ഗ്രീൻ എനർജിയും ആണ്.

B. 7. വെള്ള, വീക്ഷണ സ്ഥിരത

8. -1

9. ലോഹചട്ടക്കൂട്

Part II

A. 10. 1. വൈദ്യുതപ്രവാഹ തീവ്രത

2. സോളിനോയിഡിലെ ചുറ്റുകളുടെ എണ്ണം

3. പച്ചിരുമ്പ് ദണ്ഡിന്റെ ഛേദതല പരപ്പളവ്

B. 11. വീക്ഷണ സ്ഥിരത

ഒരു ദൃശ്യാനുഭവം നമ്മുടെ റെറ്റിനയിൽ $\frac{1}{16}s$ (0.065 s) സമയത്തേക്ക് തങ്ങിനിൽക്കും. (0.065s) നകത്ത് ഒന്നിലധികം ദൃശ്യങ്ങൾ കണ്ടാൽ അവയുടെയെല്ലാം പരിണിത ദൃശ്യാനുഭവം കണ്ണിലുണ്ടാകും.

12. $1kg$ ആ ഇന്ധനം പൂർണ്ണമായും കത്തുമ്പോൾ 45000KJ താപോർജം പുറപ്പെടുവിക്കും. കൂടിയ കലോറികമൂല്യത്തെ അടിസ്ഥാനമാക്കി.

i) കൂടിയ ലഭ്യത

ii) സൂക്ഷിക്കാനും കൊണ്ടുപോകാനുമുള്ള എളുപ്പം

iii) വില കുറവായിരിക്കണം

Part III

A. 13. a) സ്വിച്ച് ഓൺ ചെയ്യുമ്പോൾ സർക്യൂട്ടിലെ സഫല പ്രതിരോധം കുറയുന്നു. വൈദ്യുത പ്രവാഹ തീവ്രത കൂടുകയും, കൂടുതൽ ശോഭയോടെ പ്രകാശിക്കുകയും ചെയ്യുന്നു.

സ്വിച്ച് ഓഫ് ചെയ്താൽ പ്രതിരോധം കൂടുന്നു. വൈദ്യുതപ്രവാഹ തീവ്രത കുറയുകയും ബൾബിന്റെ ശോഭ കുറയുകയും ചെയ്യുന്നു.

14a) a - ആർമേച്ചർ

b - സ്പ്ലിറ്റ് റിംഗ്

b) ഓരോ അർദ്ധ ഭ്രമണത്തിനുശേഷവും, വൈദ്യുതപ്രവാഹ ദിശ മാറ്റുക.

c) dc മോട്ടോർ – മോട്ടോർ തത്വം

dc ജനറേറ്റർ – വൈദ്യുതകാന്തിക പ്രേരണം

15. ചേരുംപടി ചേർക്കുക.

	A	B
1.	ഫ്ളെമിംഗിന്റെ വലതുകൈ നിയമം	b. പ്രേരിത വൈദ്യുതിയുടെ ദിശ
2.	സ്ലിപ്പ് റിംഗ്സ്	d. AC ജനറേറ്റർ
3.	സ്പ്ലിറ്റ് റിംഗ്സ്	a. DC ജനറേറ്റർ

16. a) പ്രകാശിക സാന്ദ്രത കൂടിയ മാധ്യമത്തിൽ നിന്നും പ്രകാശിക സാന്ദ്രത കുറഞ്ഞ മാധ്യമത്തിലേക്ക് പ്രകാശം ചെരിഞ്ഞ് പതിക്കണം

b) പൂർണാന്തര പ്രതിപതനം

c) 90^0

B. 17. a) കോൺവെക്സ് ദർപ്പണം

b) a) മുഖം നോക്കാൻ

b) ഷേവിംഗ് മിറർ ആയി

Part IV

A. 18. a) കോൺകേവ് ദർപ്പണം

b) ചെറുത്, തലകീഴായത്, യഥാർത്ഥം (ഏതെങ്കിലും 2 എണ്ണം)

c) $f = uv / u + v$; $f = \dfrac{(-30)x(-15)}{-30 + -15}$; $f = \dfrac{450}{-45} = -10cm$

19. a)
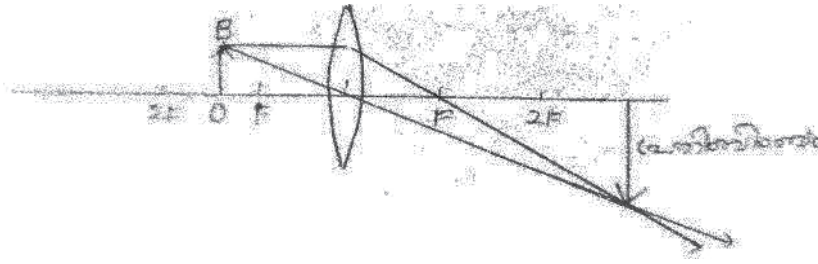
b) തലകീഴായത്, വലുത്, യഥാർത്ഥം

20. a) പ്രകാശപ്രകീർണനം

b) A = ചുവപ്പ്   B = വയലറ്റ്

c) പച്ച (സമന്വിത പ്രകാശമല്ല)

B.   21. a) ടങ്സ്റ്റൺ

b) ഉയർന്ന പ്രതിരോധം (½), ഉയർന്ന ദ്രവണാങ്കം (½), നേർത്ത കമ്പികളാക്കാൻ കഴിയുന്നു (½), ധവളപ്രകാശം പുറത്തുവിടാനുള്ള കഴിവ് (½).

c) ഇൻകാന്റസെന്റ് ലാമ്പുകളിൽ നൽകുന്ന വൈദ്യുതോർജത്തിന്റെ ഭൂരിഭാഗവും താപരൂപത്തിൽ നഷ്ടപ്പെടുന്നു.

22. a) $\dfrac{Vs}{Vp} = \dfrac{Ns}{Np}$;

$Vs = \dfrac{VpxNs}{Np}$; $Vs = \dfrac{240x200}{2000}$; $Vs = 24V$

$VsxIs = VpxIp$; $Is = \dfrac{VpxIp}{Vs}$; $Is = \dfrac{240x0.5}{24}$; $Is = 5A$

Part V

A.   23. a)
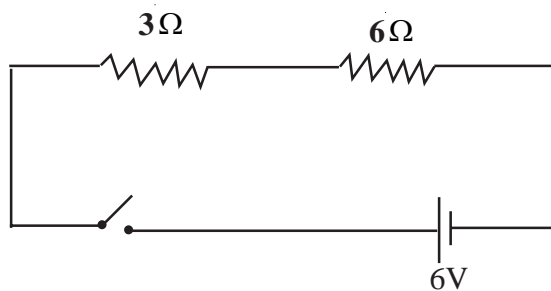
b) സഫല പ്രതിരോധം $R = R_1+R_2$

$= 3 + 6 = 9\,\Omega$

c) കറന്റ് $I = \dfrac{V}{R}$ (ഓം നിയമം)

$= \dfrac{6}{9}A$

d) $R = \dfrac{R_1 R_2}{R_1 + R_2} = \dfrac{3 \times 6}{3 + 6}$

$= \dfrac{18}{9} = 2\Omega$

24. a) വജ്രം

b) വായു, ജലം, ഗ്ലാസ്സ്, വജ്രം

c) പ്രകാശികസാന്ദ്രത കൂടുമ്പോൾ പ്രകാശവേഗം കുറയുന്നു.

d) ലംബത്തോടടുക്കുന്നു.

PHYSICS

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

PHYSICS

Time : 1½ Hrs.   Maximum score : 40

Instructions

* 15 minutes is given cool-off time
* Use Cool-off time to read the questions
* Attempt the questions according to the instructions
* Keep in mind the score and the time while answering the questions.

PART I

A. Answer any 4 questions from 1 to 6. Each carries 2 score   (4x1=4)

1. Find the relation and complete the word pair?

   Electric bulb : Lighting effect ; soldering iron : ....

2. Write the Energy change in electric motor........

3. What is the frequency of AC generated in India?

4. If radius curvature of the mirror is 48cm. Then find the focal length of the mirror?

5. If the refracted ray is passing parallel to the surface of seperating two medium, then what is the angle of refraction?

6. Find the odd one and give reason.

   (Solar energy, fossil fuel, geo thermal energy, wave energy)

B   Answer all 3 questions from 7 to 9. Each carries 1 score   (3x1=3)

7. In which colour does Newton's colour disc appear when rotated fast?
   What property of the eye makes this possible?

8. If size of the image formed by convex lens as same as size of the object, then what is the magnification?

   (+1, -2, -1, +2)

9. Which part of the appliance is connected to the pin E of the three pin plug?

PART II

A.   Answer the following questions. Carries 2 score   (1x2=2)

10. What are the factors influence the magnetic field of a current carrying Solenoid?

B. **Answer any one question from 11 to 12. Each carries 2 score**   **(1x2=2)**

11. Raindrops falling down during rain appear like a glass rod. Explain the phenomenon?

12. Caloric fic value of a fuel is markes as 45000KJ/kg" What does it mean? Efficiency of most efficient fuel is based on which factorb

PART III

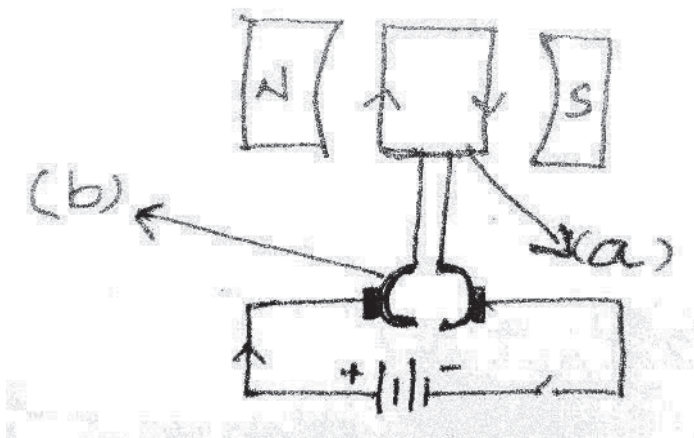**A** **Answer any 3 questions from 13 to 16. Each carries 3 score.**   **(3x3=9)**

13. Observe the figure.

12V
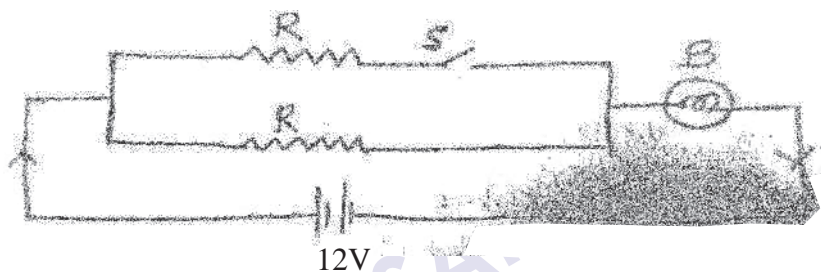
a) If the switch is ON how will the intensity of bulb change? And if it is in off condition how will the intensity varry?   (1)

b) Justify your answer.   (2)

14. The figure below shows a DC motor.

a) Name the parts which is marked as (a) and (b)?

b) What is the function of (b) marked in above figure?

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c) Differenciate the working principle of dc motor and dc generator?

15. March the following

A	B
1. Fleming's right hand rule	1. DC motor
2. Slip ring	2. Direction of induced current
3. Split ring	3. Direction og motion of conductor
	4. AC generator

16. Observe the figure.

   (Critical angle of glass is 42^0)
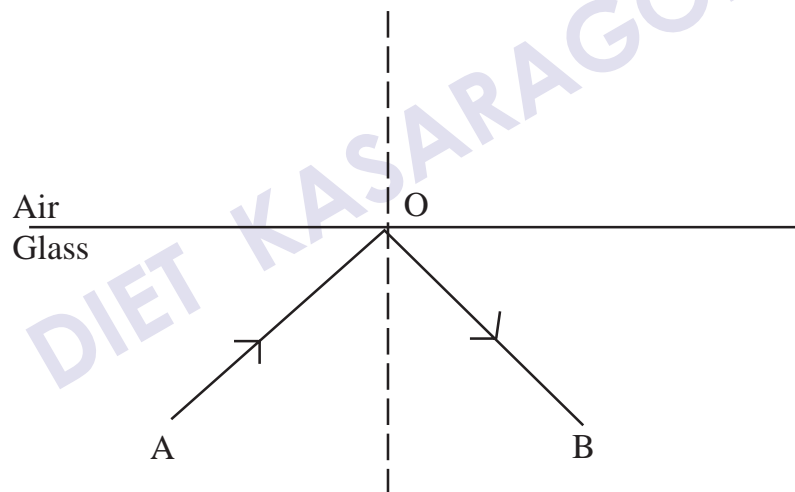
a) Here the light ray. AO is reflected as OB in the same medium. Write one circumstance for that type of reflection?

b) This phenomenon is known as what?

c) If the incident angle is 42^0. What will be the refracted angle?

B   **Answer the following question.**   **(1x3=3)**

17. a) Find out the mirror with maximum field of view from the bracket?

   (Concave mirror, Convex mirror, Plane mirror)

b) Complete the following table

Mirror	Used for
Plane mirror	.................(a)...............
Concave	.................(b)...............

PART IV

A. **Answer any 2 questions from 18 to 20. Each carries 4 score.** **(2x4=8)**
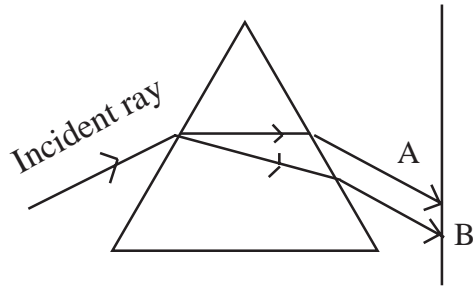
18. Observe and analyse the figure?
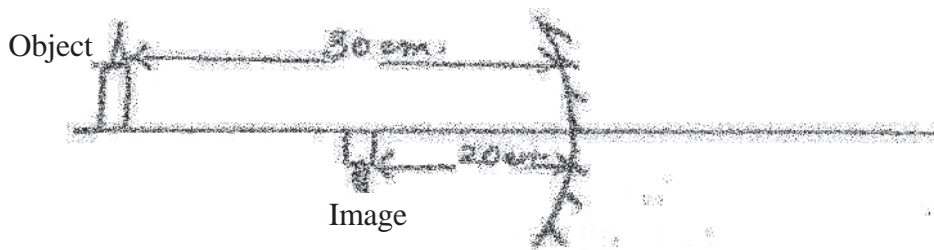
a) Identify the mirror? (1)

b) Pecularities of the image than object? (1)

c) Find out the focal length of the concave mirror? (2)

19. An object OB inplaced infront of the convex lens.
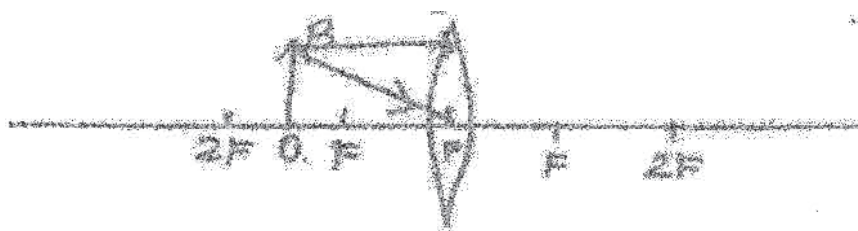
a) By the help of incident rays draw the image formation? (2)

b) What are the properties of the image? (2)

20. a) Identify the phenomenon of light from the figure? (1)

b) If the incident ray is white light then A = ... colour and
B = ... colour. (2)

c) If the incident ray is green light, then the colour obtained on the
screen is .... (1)

B. Answer any 1 question from 21 to 22. Each carries 4 score   (1x4=4)

21. Electric bulbs are examples of lighting effect of electricity.

a) Name the material used for the preparing the filament of electric bulb? (1)

b) What are the pecularities of this material? (1)

c) The efficiency of incandascent lamp is less. Why? (2)

22. A transformer which has no powerloss has 200 turm in primary and 2000 turn in
secondary. Now the primary has 0.5A intensity of electric current and 240V
then find out the secondary voltage and secondary current?

PART V

A. Answer any one question from 23 to 24. Each carries 5 score   (1x5=5)

23. Two resistance of $3\Omega,\ 6\Omega$, 6V battery and switch are given,

a) Depict a figure of series connection using these component? (1)

b) Calculate the effective resistance of series connection? (1)

c) Calculate the current in this circuit? (1)

d) Calculate the effective resistance, if resistors are connected in parallel? (2)

24. Some light conducting media are given in the bracket.

    (Air, Diamond, Water, Glass)

    a) Which of these has greater optical density? (1)

    b) Arrange the media in the decreasing order of their speed of light? (2)

    c) What is the relation between optical density and speed of light? (1)

    d) When light passes from water to glass, what happens to the path of light? (1)

PHYSICS - ANSWER KEY - SET 2

Part I

A. 1. Heating effect

2. Electric energy to mechanical energy

3. 50Hz

4. 24cm

5. 90^0

6. Fossil fuel, Fossil fuel is brown energy. Remaining are Green energy

B. 7. White persistance of vision

8. -1

9. Metal part

Part II

A. 10. 1. Number of turns in the solenoid

2. Intensity of current

3. Area of cross section of the Iron core.

B. 11. Persistance of vision

When an object is viewed by a person, its image remains in the retina of the eye

for a time intervel of (0.065 s) $\frac{1}{16} s$ after seeing it.

12. On complete combustion of 1kg of the fuel produced a heat energy of 45000KJ.

Availability, easy to transport, easy to handle.

Part III

A. 13. a) If the switch is ON, The bulb 'B' glow more. If the switch is OFF, The bulb 'B' is glow decrease.

b) When switch is ON, effective R will be less and current will be more. Hence more glow.

When such is OFF, first resistance is not in circuit and total R will be a greater value. Hence less curernt and less glow.

14. a)   a- Armature

       b - Split ring

   b)   To change the direction of current

   c)   DC Motor Principle

      DC Generator - Electro Magnetic Induction.
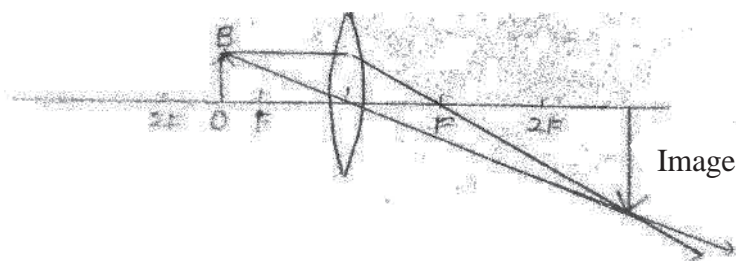
15.   a - 2

      b - 4

      c - 1

16.   a)   Light should travel from denser medium to rarer medium.

      b)   Total Internal reflection

      c) 90^0

B. 17.   a) Convex mirror

     b)   a)   To see face

          b)   Shaving mirror

Part IV

A. 18. a) Concave mirror

     b)   Real, inverted and smaller than object.

     c) $f = uv/u+v$; $f = \dfrac{(-30)x(-15)}{-30+-15}$; $f = \dfrac{450}{-45} = -10cm$

19. a)

Image

     b)   Inverted, Real & bigger than object

20. a)   Dispersion of light

    b)   A = Red,   B = Violet

    c)   Green (not a composite light)

B.   21. a)   Tungston

    b)   A = Red,   B = Violet

    c)   Most of the electric energy is loss as heat energy.

22. a) $\dfrac{Vs}{Vp} = \dfrac{Ns}{Np}$;

   $Vs = \dfrac{VpxNs}{Np}$; $Vs = \dfrac{240x200}{2000}$; $Vs = 24V$

   $VsxIs = VpxIp$; $Is = \dfrac{VpxIp}{Vs}$; $Is = \dfrac{240x0.5}{24}$; $Is = 5A$

Part V

A.   23. a)
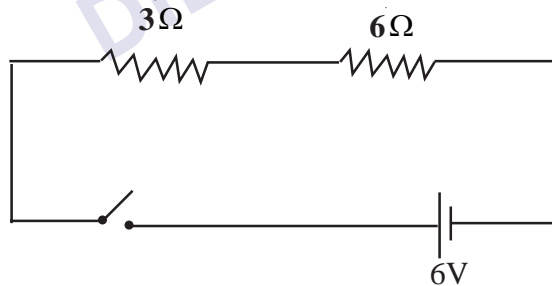
   b)   Effective resistance $R = R_1 + R_2$

            $= 3 + 6 = 9\,\Omega$

   c)   Current $I = \dfrac{V}{R}$ (Ohm's law)

            $= \dfrac{6}{9}A$ Or $\dfrac{2}{3}A$

d) $R = \dfrac{R_1 R_2}{R_1 + R_2} = \dfrac{3 \times 6}{3 + 6}$

$= \dfrac{18}{9} = 2\Omega$

24. a) Diamond

   b) Air, Water, Glass, Diamond

   c) As optical density increases, speed of light decreases

   d) Deviate towards the normal

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

PHYSICS

Time : 1½ Hrs.   Maximum Score : 40

Instructions

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* Use Cool-off time to read the questions
* Attempt the questions according to the instructions
* Keep in mind the score and the time while answering the questions.

PART I

A. **Answer any 4 questions from 1 to 6. Each carries 1 score.** **(4x1=4)**

1. Which of the following is incorrect?

$$\left(P = IR^2, \ P = VI, \ P = \frac{V^2}{R}, \ P = I^2R \right)$$

2. From the following which one is not apart of motor?

    (Armature, Field magnet, Voice coil, Splitring)

3. Safety fuse works on heating effect of electric current. To which line the fuse is connected?

4. When white light passes through a prism it under go dispersion. Which colour deviate more and which colour deviate least?

5. LPG is a colourless odourless gas. Which chemical substance is added for the smell?

6. Which defect of vision can be rectified by using concave lens.

    (Near sightedness, Longsightedness, Presbyopia)

B **Answer all 3 questions from 7 to 9. Each carries 1 score.** **(3x1=3)**

7. Which divice is used to bring changes in electric current without loss of power?

    (Resistor, Ammetor, Voltmeter, Inductor)

8. Hydrogen has the more calorific value. What you mean by Calorific value?

9. For a normal vision of human being near point is .... and far point is ....

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**A. Answer the following question. Carries 2 score** (1x2=2)

10. Solenoid of same length and thickness are connected to points A and B in the 2 circuits. Observe the circuits and answer the following questions.
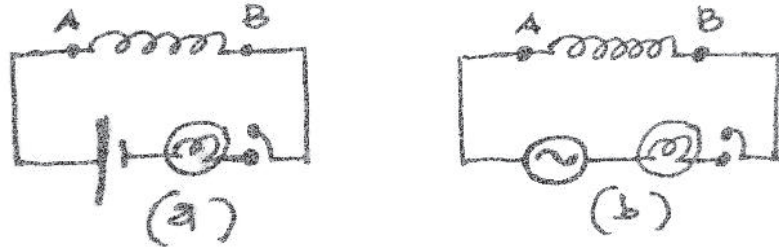
(i) When circuit (a) and (b) are switched ON what changes do you observe in the intensity of light?

(ii) Give its reason?

B. Answer any one question from 11 to 12. Each carries 2 score (1x2=2)

11. What is the reason for twinkling of star? Explain the phenomenon?

12.
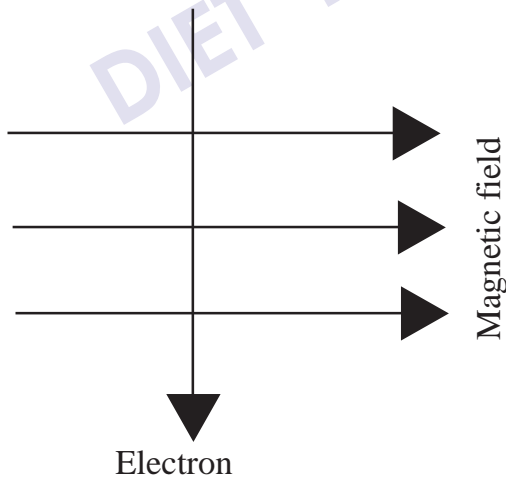
The direction of movement of electrons through a magnetic field is depicted. Find the direction of force felt by electrons? Explain the law use to find the direction of force.

A **Answer any three questions from 13 to 14. Each carries 3 score** **(3x3=9)**

13. a) Which are the circumstances that cause high electric current, leading to the melting of fuse wire?

   b) When fuse wire is included in a household wiring, what are the precautions to be taken?

14. Rearrange the flow chart, which shows the working of moving coil microphone.

   a)

| Voice coil Vibrates | → | Diaphram Vibrates | → | Electric signals are forming in the voice coil |

| Makes sound |
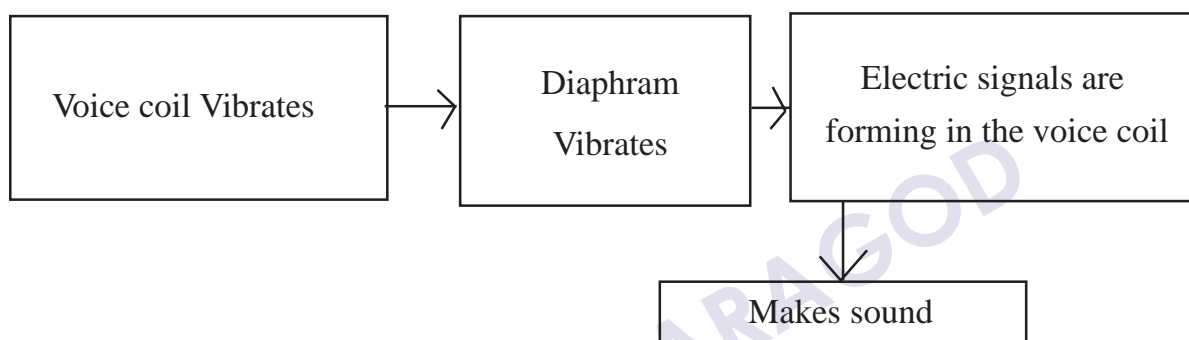
   b) Find out one difference between working of moving coil microphone and moving coil loudspeaker?

15. Martch the following

A	B
a) Concave mirror	1) Virtual image with same size of object
b) Plane mirror	2) Virtual image with small size
c) Convex mirror	3) Virtual image with large size of object

16.
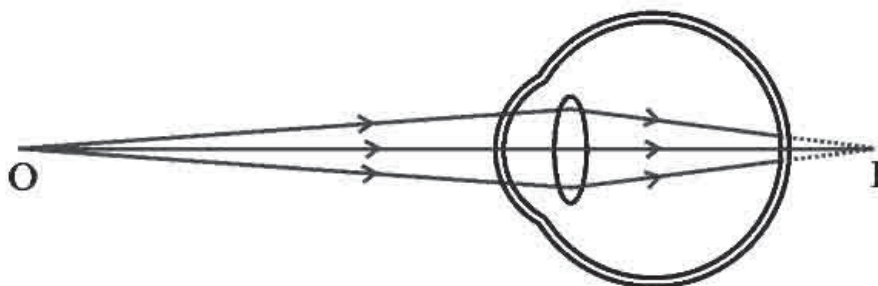
This is the picture of image formation of one's eye.

a) What is the name of defect of eye of that person?

b) What is the cause for this eye issue?

c) How can we correct this defect?

B **Answer the following questions.** (1x3=3)

17. a) What do you mean by light pollution?
    b) Which week is observed as International dark sky week?
    c) What is the need of this observation?

PART IV

A. **Answer any 2 questions from 18 to 20. Each carries 4 score.** (2x4=8)

18. An heating coil of 550 ohm resistance working on 220V.

a) Find out the electric current in the circuit?

b) Find out the heat energy in 5 minutes?

c) Write the equation to calculate electric power?

19. Most of the countries facing the problem Energy Crisis.

a) Define energy crisis?

b) Solutions for minimising energy crisis?

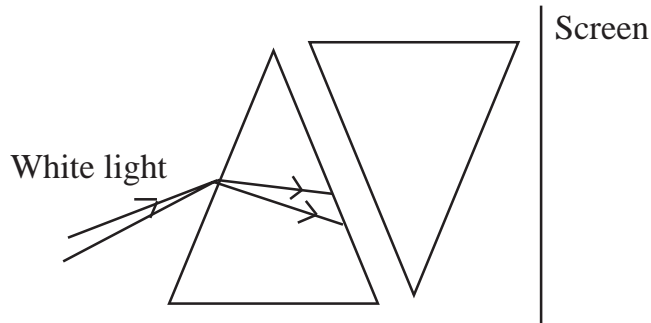20. Observe the magnetic field of the solenoid in the figure.
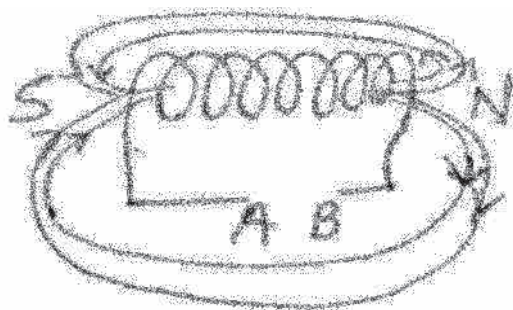
a) Draw the complete figure and mark the poles of battery at A and B?

b) What are the factors effecting the magnetic field of a solenoid?

B. Answer any one question from 21 and 22. Each carries 4 score.   (1x4=4)

21. Observe the figure.

a) Complete the figure?   (2)

b) Which colour is obtained on the screen?   (1)

c) Identify the phenomenon of light happening in the first prism?   (1)

22. Based on household electrification. Find out the answer?

a) Electric switches and fuse are arranged in which electric line?   (1)

b) The earth wire is connected which part of the Iron box? What are the difference of this pin than others?   (2)

c) Which method is adopt to arrange the switches and fuse in the electric line?   (1)

PART V

A. Answer any one question from 23 to 24. Each carries 5 score   (1x5=5)

23. The figure of a generator is given.

71
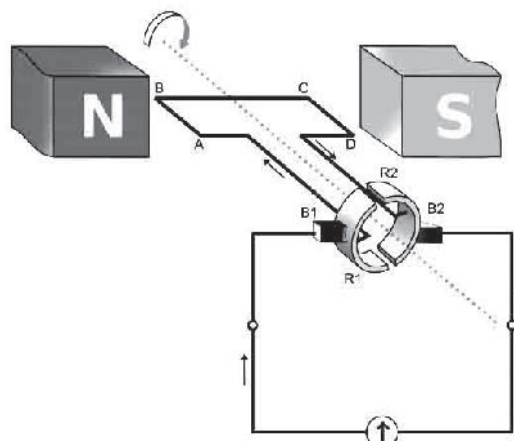
a) Identify the generator?

b) What is the structural difference between AC generator and DC generator?

c) What is the energy change that takes place in a motor and in a generator?

d) Eventhough the induced emf is AC, the current produced by a DC generator is DC. How?

24. Choose the appropriate words from bracket related to following statements.

(Concave, Convex, Real, Virtual, Principal focus, Pole)

a) Rear view mirror in vehicles is ....

b) According to New cartesian sign convention, distances are measured from the ....

c) When the magnification of a mirror is positive, the image is ....

d) .... mirror is used as solar concentrators. (1)

e) When the object is placed at C, the image formed by concave mirror is .... (1)

PHYSICS - ANSWER KEY - SET 3

Part I

A. 1. $P=IR^2$

2. Voice coil

3. Phase line

4. More deviate $\longrightarrow$ Violet

    Less deviate $\longrightarrow$ Red

5. Ethyl mercaptan

6. Near sightedness

B. 7. Inductor

8. The amount of heat liberated by the complets combustion of 1kg of fuel is its Calorific value.

9. Near point : 25 cm

    Far point : Infinity

Part II

A. 10. (i) Intensity of light connected in bulb (fig.b) is less when it switched 'ON'

    (ii) Due to back emf

B. 11. Atmospheric refraction

    Bending of ray of light when it travelling from one transparent medium to another.

12. Into the paper.

    Flemings Left Hand Rule.

    If we stretch forefinger, middle finger and thumb of our left hand in mutually in direction then fore finger indicate diretion of magnetic field, middle finger indicate direction of current and thumb indicate direction of force.
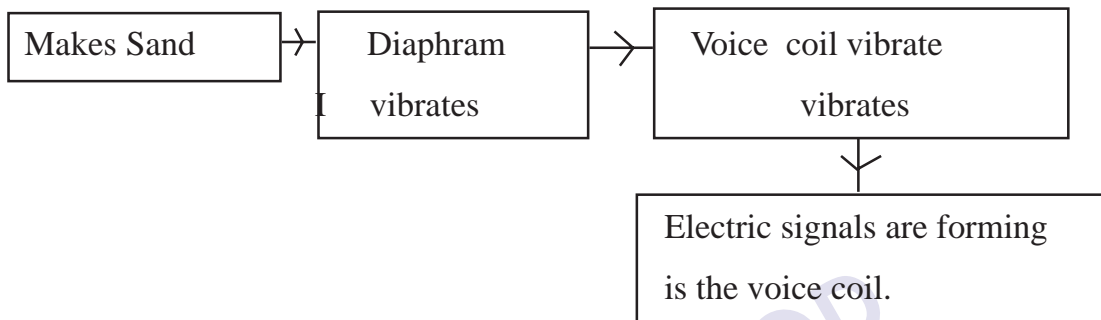
73

Part III

A.   13. a) Short circuit

  Overloading

  b) 1) The ends of the fuse wire must be connected firmly at appropriate points.

  2) The fuse wire should not project out of the carrier base.

14a)

| Makes Sand | → | Diaphram vibrates | → | Voice coil vibrate vibrates |

→ Electric signals are forming is the voice coil.

 b) Microphone - Mechanical Energy to Electrical Energy

  Loud Speaker - Electrical Energy to Mechanical Energy

15. Match the following

  a - 3

  b - 1

  c - 2

16.   a) Long sightedness (Hypermetropia)

  b)   1) Smaller size of eye ball

    2) Low power of eyes

  c) By using convex lens of suitable power.

B.   17. a) The use of light in excess in a non-judicious manner is known as Light Pollution.

  b)   The week of the new moon in April

c) To make awareness of light pollution and its adverse effect in our environment

Part IV

A.   18. a) $I = \dfrac{V}{R}$; $I = \dfrac{220}{5}$ $I = 4A$

b) $H = I^2Rt$ $(H = VIt; H = \dfrac{V^2}{R}t)$ (½ mark)

$H = 4 \times 4 \times 55 \times 5 \times 60; H = 220 \times 4 \times 300$ (1 mark)

$H = 26400J$ (½ mark)

c) $P = VI$ (OR) $P = I^2R$ (OR) $P = \dfrac{V^2}{R}$ (1 mark)

19. a) Increasing demad and decreasing availability of resources energy crisis.

b) 1) Judicious utilization of energy

2) Maximum utilization of solar energy
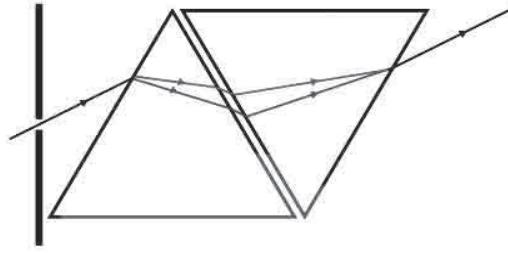
3) Minimising the wastage of water?

20. a)

A = Negative

B = Positive

b) If direction of current is clock wise in the facing end then it is south pole. If it is anticlock wise direction of current the North pole. As the intensity of current increases number of magnetic lines also increases.

B. 21. a)

  b) White

  c) Dispersion of light. White light is a composite light.

22. a) Phase

  b) The earth wire is connected to the metallic part of Iron box.

  The differences are thicker and longer than other pins.

  c) Parallel

Part V

A. 23. a) DC Generator

  b) Split Rings in DC generator

  Slip Rings in AC generator

  c) Generator - Mechanical Energy to Electrical Energy

  Motor - Electrical Energy to Mechanical Energy

  d) By using split ring commutator

24. a) Convex

  b) Pole

  c) Virtual

  d) Concave

  e) Real

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

PHYSICS

Time : 1½ Hrs.   Maximum score : 40

Instructions

* 15 minutes is given cool-off time

* Use Cool-off time to read the questions

* Attempt the questions according to the instructions

* Keep in mind the score and the time while answering the questions.

PART I

A. **Write any four questions from 1 to 6. Each carries 1 score** **(4x1=4)**

1. When electric current through a circuit is reduced to half then,

   Heat produced is .... according to Joule's Law.

   $(4, \ 2, \ 1/4, 1/2)$

2. Select the wrong statement related to Tungsten filament?

   a) High Resistivity

   b) High ductility

   c) Low melting point

   d) It can be kept white hot

3. Write the correct relation

   Transformer : Mutual Induction : : Generator : ....

4. Identify the position of object when a convex lens produce real and enlarged image.

   (At 2F, Between F and lens, Beyond 2F, Between F and 2F)

5. Can you guess why red colour has been given to Danger Signals?

6. The full form of LPG is ....

B **Answer all questions from 7 to 9. Each carries 1 score** **(3x1=3)**

7. Total number of images formed when two plane mirrors are arranged at 120^0

   (2, 1, 3, 4)

8. What is Biomass?

9. How are the Electrical appliances are connected in House hold circuits?

PART II

A.   Answer the following question. Carries 2 score   **(1x2=2)**

10. Select the correct statements from the following.

  (i)   Magnification is negative when the image is Virtual and Erect.

  (ii)   If magnification is greater than one then size of image is greater than object.

  (iii) If magnification is one then size of image and object are same.

  (iv)   If magnification is positive, then image is inverted and real.

B.   Answer any one question from 11 to 12. Each carries 2 score   **(1x2=2)**

11. What is the advantage of discharge lamp over incandescent lamp?

12. When a pencil is placed in a glass of water, what change you can observe?

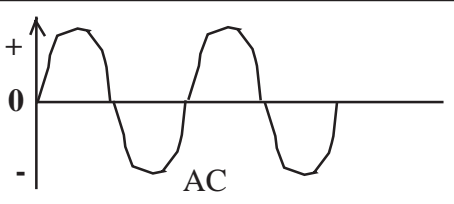   Explain the phenomenon behind it?

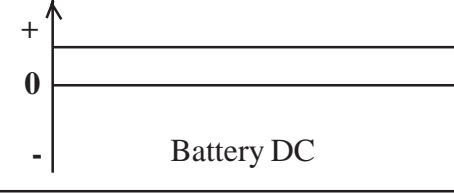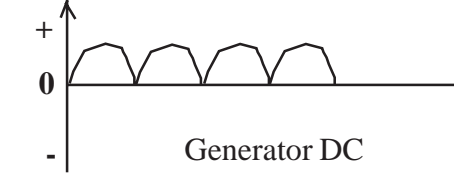## PART III

A   Answer any three questions from 13 to 16. Each carries 3 scores   **(3x3=9)**

13. Observe the figure
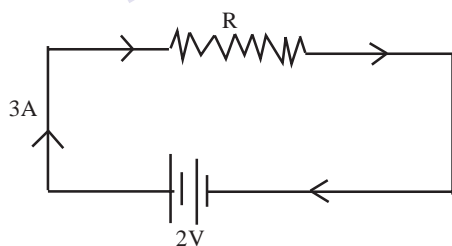
  a)   Find out the quantity of charge flowing through the resistor in 1 second?

  b)   Calculate the work done by the battery in one second to move this charge through the resistor?

  c)   Calculate the power of the bulb?

14. Analyse the table and complete it.

A	B
AC	* Change the direction continuously * ....(A)................
Battery DC	* ....(B)................ * emf is not increasing or decreasing
Generator DC	* ....(C)................ * emf is increasing and decreasing

15. Observe the circuits

(A)   (B)
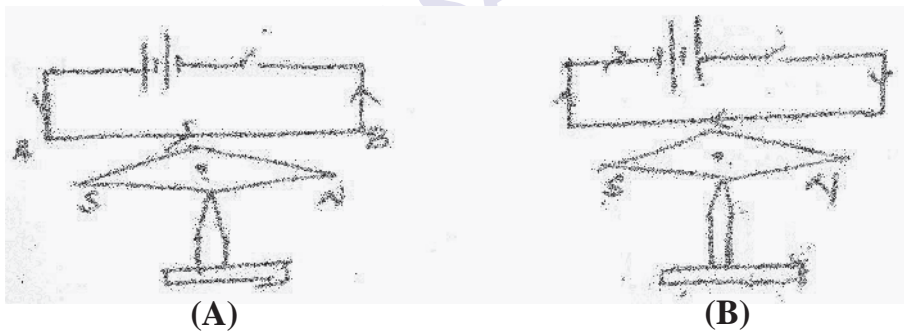
a) What happens to the magnetic needles in the both circuit, when the switch is on?

b) What is the difference in movement of needle?

c) By using which law you concluded to a decision?

16. If the magnification of an image formed by a concave mirror is - 1

a) Where will be the position of the object?

b) Where will be the position of the image?

c) Write the characteristics of the image?

B   **Write down the answer for the following question.**   **(1x3=3)**

17. We can see the path of light rays in misty mornings.

   a) Name the phenomenon?

   b) Write the definition of the phenomenon

   c) It's intensity is related to ....

PART IV

A.   **Answer any 2 questions from 18 to 20. Each carries 4 score.**   **(2x4=8)**

18. An electrical appliance marked 230V, 960W has connected to the output of a transformer.

   a) The primary voltage is 115V. Then identify the type of transformer

   b) Find out the electric current flowing both in primary and secondary?

   19. You are familiar with cooking gas.

   a) Identify the fuel which is using as cooking gas?

   b) This gas is a colourless odourless gas. But it produces an odour when there is leackage of gas. Give reason?

   c) It is marked D22 on a gas cylinder. What do you understand from this

   d) What are the precautions to be taken to avoid accidents due to leackage of gas.

20. a) Identify the mirror which show always small and erect image?

   b) Name the situation using their type of mirror?

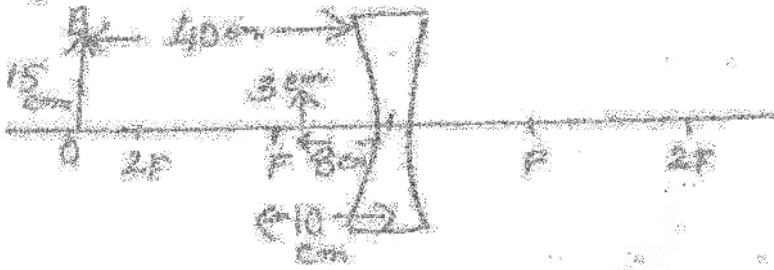   c) Which part of this mirror helps to form such images?

B.   **Answer any one question from 21 and 22. Each carries 4 score**   **(1x4=4)**

21. Light emitting diodes are LED bulbs.

   a) What are the main parts of LED bulbs?

   b) What are the importance of LED bulbs than other bulbs?

22. a) Observe the figure and find out the values according to New Cartesian sign convention.?
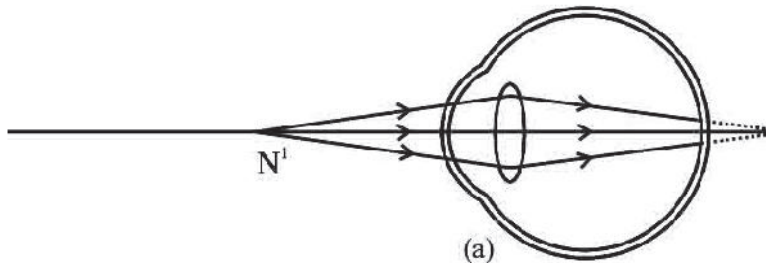
$(u, \ v, \ f, \ h_0, \ h_i)$

b) Calculate the magnification of this image?

PART V

A. **Answer any one questions from 23 to 24. Each carries 5 score.** **(1x5=5)**

23. The following figure shows that the image formation in the eye of a person.

(a)

a) Identify the eye defect of the person?

b) What are the reasons behind this defect?

c) How can it be rectified?

d) Draw its ray diagram?

24. When electricity is transmitted to distant places there is loss of energy in the conductors in the form of heat.

a) What are the methods to reduce heat generated?

b) Which type of transformer is there in power station?

c) Which type of transformer is a distribution transformer?

d) If a person standing on the earth touches a phase line, will he get an electric shock? Why?

e) What is the potential difference between 2 phase line?

PHYSICS - ANSWER KEY - SET 4

Part I

A. 1. $\frac{1}{4}$

2. (c) Low melting point

3. Electromagnetic induction

4. Between F and 2F

5. Red colour has more wave length. Hence it scatter close to the observer.

6. Liquified Petroleum Gas

B. 7. 2

8. Fuels obtained from plants and animals

9. In parallel manner

Part II

A. 10. (ii) and (iii)

B. 11. More life span

Less consumption of electricity

More light

12. We can observe a bend in pencil at the surface of separation of air and water. It is due to refraction. Bending of ray of light when it is travelling from one medium to another.

Part III

A. 13. a) $Q = Ixt$
$3x1 = 3C$

b) $W = VxQ$
$= 2x3 = 6J$

c) $P = V \times I$

$= 2 \times 3 = 6W$

14. a) emf is increasing and decreasing

b) Direction is not changing

c) Direction is not changing

15. a) Bolh - Vibrates

b) A - Anticlock wise

B - Clockwise

c) Right hand thumb rule

16. a) at C (2F)

b) at C (2F)

c) Real, Inverted

B. 17. a) Twindel effect

b) When rays of light pass through a colloidal fluid the tiny particles get illuminated due to scattering. But this the path of light is made visible.

c) Size of particles

Part IV

A. 18. a) Step up transformer

b) Intensity of elecric current is

Secondary : $P = VI$; $I = P/V$; $I = 960/230$: $I = 4.17A$

Power is same in both circuits in a transformer.

Primary : $P = VI$; $I = P/V$; $I = \dfrac{960}{115}$; $I = 8.34A$

19. a) LPG / Butane / C^4H^{10}

b) Ethyl Mercaptan is adding for odour

c) The expiry time is December 2022.

d) Check the rubber tube frequently, Obem the knob only after opening the Regulator.

20. a) Convex mirror

b) Rearview mirror

c) It has a large aperture

B. 21. a) Base unit, Power supply unit, Heat sink, Printed circuit board, Diffucer cup.., base plate (Any 2)

b) No heat loss, No environmental pollution, Easy to handle, Less powewr consumption (Any 2)

22. a) u = -40cm

v = -8

f = -10cm

hi = 3cm

ho = 15cm

b) Magnification (m) $\dfrac{hi}{h0}$ OR $\dfrac{V}{u}$

$$m = \dfrac{3cm}{15cm} \; or \; \dfrac{-8cm}{-40cm} \; = \; \dfrac{1}{5}$$

Part V

A. 23. a) Hypermetropia (Long sightedness)

b) Size of the eye ball is smaller

Focal length of lens is high (power is low)

c) By using a convex lens of suitable power.

d)
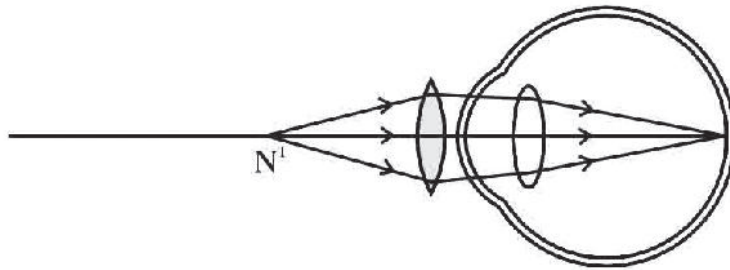
24. a) Reduce current and resistance

b) Step up transformer

c) Step down transformer

d) Get electrical shock. Because there is a potential difference between earth and a phase line is 230V.

e) 400V

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

PHYSICS

Time : 1½ Hrs.   Maximum score : 40

Instructions

* 15 minutes is given cool-off time
* Use Cool-off time to read the questions
* Attempt the questions according to the instructions
* Keep in mind the score and the time while answering the questions.

PART I

A. Write any four questions from 1 to 6. Each carries 1 score   **(4x1=4)**

1. Find the correct relation and fill in the blanks.

    Heat : Joule : : Resistance : ....

2. What are the reason for excess current flow through the curcuits?

3. Most abundant fossil fuel on earth is ....

4. Find power of a convex lens of focal length 50cm?

    (+4D, +2D, +5D, +3D)

5. Locate the position of object in order to get virtual, erect and enlarge image when it is kept infront of a concave mirror at,
    (between F and P,   Beyond C, At C, Between C and F)

6. Potential difference between 2 phase line is

B Answer all questions from 7 to 9. Each carries 1 score.   **(3x1=3)**

7. Give a situation in which we can use only solar panels?

8. Find height of image, when an object of height 4 cm, is placed infront of a convex lens of magnification - 2.

9. According to Flemings Left Hand Rule, Fore finger indicate direction of magnetic field, middle finger indicate the direction of..............., and thumb indicate the direstion of ....?

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PART II

A. Answer the following question. Carries 2 score. (1x2=2)

10. Complete the path of rays in fig (a) and (b)

(a)   (b)
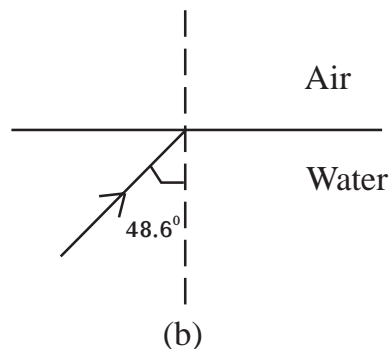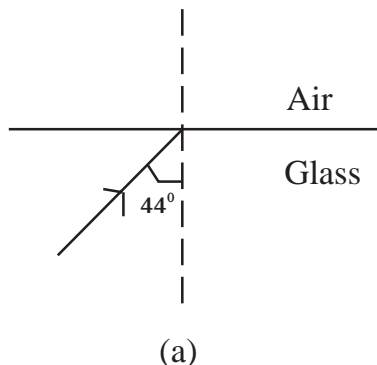
B. Answer any one question from 11 to 12. Each carries 2 score (1x2=2)

11. a) Explain Energy conversion in Hydroelectric station.

    b) Give 2 examples of Hydroelectric power stations.

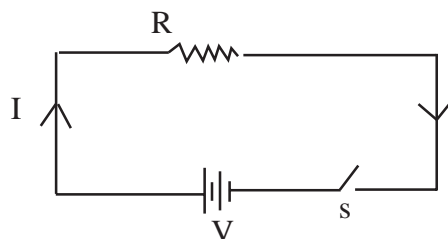12. Normally we observe beam of light through the slit of window, door etc.

    Explain the optical phenomenon behind it?

PART III

A Answer any three questions from 13 to 16. Each carries 3 scores. (3x3=9)

13. Observe the figure and find the answer.

In 1 second 200J of heat energy is producing in this circuit.

a) If the resistance is $\dfrac{R}{2}$, Calculate current in this circuit?
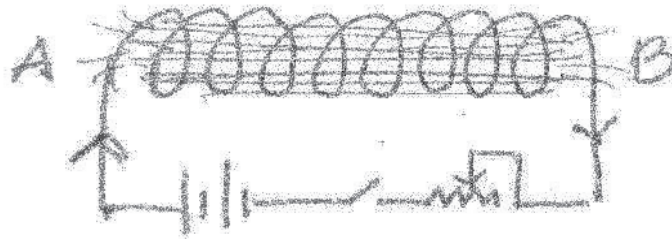
($I/_2$, $2I$, I, $4I$)

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b) Then how much will be the heat energy produced in this circuit?

(100J, 200J, 800J, 400J)

c) Name the law which used to find the heat energy in the circuit?

14. Observe the figure and find out the answer.

a) If the end A of a solenoid is wounded anticlock wise direction. The end A will act as which pole?

b) The direction of current is opposed and bring a south pole of a magnet near to end A. Whether end A attract or repel? Guess reasons.

15. Observe the figure and find the answer

A	B
1) Electromagnetic inductor	a) Transformer
2) Mutual induction	b) Moving coil loud speaker
3) Self induction	c) Moving coil microphone
	d. Inductor

16. Some statements are given about the formation of lens. Differentiate them and tabulate in to coloumns of real image and virtual image.

a) Inverted

b) Erect

c) Can focus into screen

d) Cannot focus in the screen

e) Magnification is negative

f) Image will be at the same side of the object.

B   Answer the following question.

17. a) Write down 2 examples for Biomass?

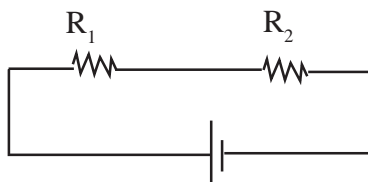   b) What are 2 important consequences of making biomass as fuel?

    c) How can we manage biomass in to eco-friendly energy form?

PART IV

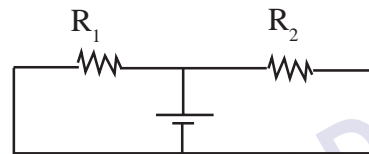**A.   Answer any 2 questions from 18 to 20. Each carries 4 score.   (2x4=8)**

18. Observe the figure.

(A)   (B)

    a)   Draw the circuits A, B and mark the direction of current?

    b)   Write the equations to find out the effective resistance in the circuits A, B?

19. The two ends of a solenoid is connected to the galvano meter and a bar magnet is moving inwards and outwards of the solenoid continuously.

    a) What happens to the needle of the galvanometer and find out phenomenon behind it?

    b) To increase the intensity of electric current in the circuit what are the factors to be considered?

20. A lens, which has always produce a virtual image has a focal length 25cm.

    a) Identify the type of lens?

    b) What are the other pecularities of the image?

    c) Calculate the power of this lens?

B. **Answer any one question from 21 to 22. Each carries 4 score.** **(1x4=4)**

21. Newton's colour disc is an example pf Persistance of vision.

   a) What are the colour's arranged on a Newton's colour dic?

   b) Which colour has seen when it is rotating very fastly?

   c) Explain the phenomenon Persistance of Vision?
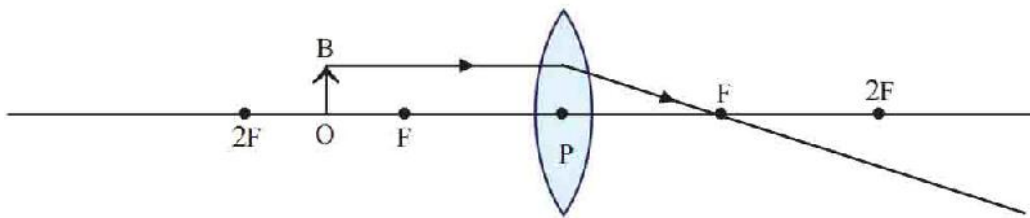
22. a) Complete the table

Mirror	Situation used
Plane mirror	.......(a).......
Concave	.......(b)......
Convex mirror	......(c).......

   b) From these mirrors whichc has more aperture...?.

PART V

A. **Answer any 1 question from 23 to 24. Each carries 5 score** **(1x5=5)**

23. a) Complete the following ray diagram

   b) Write the position of the image formed?

   c) Write down the nature of the image?

   d) If concave lens is placed instead of convex lens in the above figure, what will be position and nature of the image formed?

24. A copper wire and a Nichrome wire of same length and diameter are connected in series in a circuit. When the current flow through the circuit,

a) Which one will be heated more? Why?

b) Which law will help to calculate the heat generated in the conductorb

c) A current of 1A flow through an electrical device of resistance $100\,\Omega$. If this device works for 5 minutes. Calculate the heat generated?

PHYSICS - ANSWER KEY - SET 5

Part I

A. 1. Resistance : ohm

2. Short circuit

   Over loading

3. Coal

4. $P = \dfrac{100}{f(cm)} = \dfrac{100}{50} = +2D$

5. Between 'F' and 'P'

6. 400V

B. 7. Satellite

8. h_0 = 4cm, hi = ?
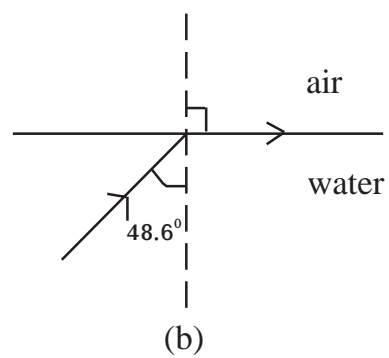
   m = -2

   $m = \dfrac{hi}{ho} = -2 = \dfrac{hi}{4}$

   hi = -2 x 4

   - 8 cm

9. Thumb $\longrightarrow$ force

   Middle finger $\longrightarrow$ current

Part II

A. 10.

(a)   (b)
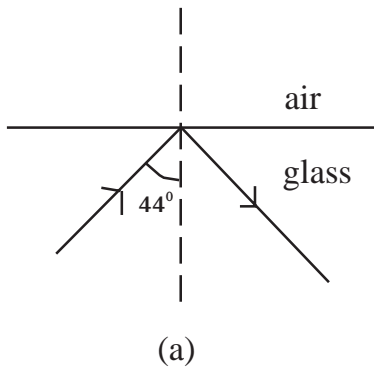
B.   11. a) Potential Energy $\longrightarrow$ Kinetic Energy $\longrightarrow$

Mechanical Energy $\longrightarrow$ Electrified Energy

b) Pallivasal   Kuttiyadi

Moolamattam

12. Tyndal Effect

When rays of light pass through a colloid or suspension, the timy particle get illuminated due to scattering. Because of this path of light is made visible. This phenomenon is called Tyndal Effect.

Part III

A.   13. a) $2I$

b) $H = I^2Rt$

$$= (2I)^2 \times \frac{R}{2} \times t$$

$$= 2I^2Rt$$

$$= 2 \times 200J = \textbf{400J}$$

c) Joule's law

14. a) North pole

b) Repul.. Because now the end A is acting as south pole

15. Match the following

A	B
1	c
2	a
3	d

16.

Real Image	Virtual image
a	b
c	d
e	f

B. 17. a) Fire wood, cow dung cake

b) 1. Air pollution

2. Health pollution

c) Biogas plant

Part IV

A. 18. a)

(A)   (B)
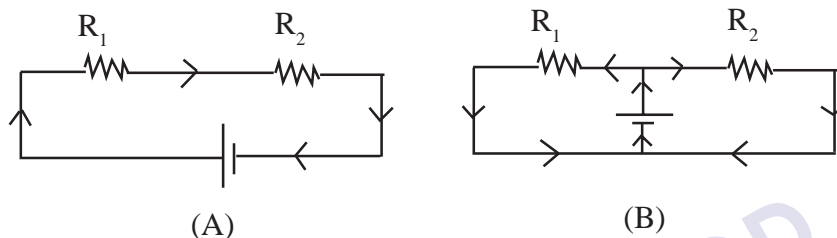
b) Circuit A ; $R = R_1 + R_2$

Circuit B ; $R = \dfrac{R_1 R_2}{R_1 + R_2}$

OR $\dfrac{1}{R} = \dfrac{1}{R_1} + \dfrac{1}{R_2}$

19. a) Galvanometer needle deflects

Reason : Electromagnetic Induction

b) Factors:

1) Number of turns in the solenoid

2) The speed of bar magnet

3) The magnetic power of bar magnet

When these are increased intensities of electricity increases in the circuit.

20. a) Concave lens

b) Small, erect

c) Power of lens P $= \dfrac{1}{\text{focal length of less in meter}}$

$$P = \dfrac{1}{-25/100} \; : \; P = \dfrac{100}{25} \; : \; P = -4D$$

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B. 21. a) VIBGYOR

    b) White

    c) The image remains in the retina $\frac{1}{16}$ seconds only OR 0.0625 second.

22. a)

Mirror	Used situation
Plane mirror	a) Looking face
Concave	b) ENT head mirror/search light Dentist mirror/shaving mirror
Convex mirror	c) Rear view mirror

    b) Convex mirror

Part V

A. 23. a)
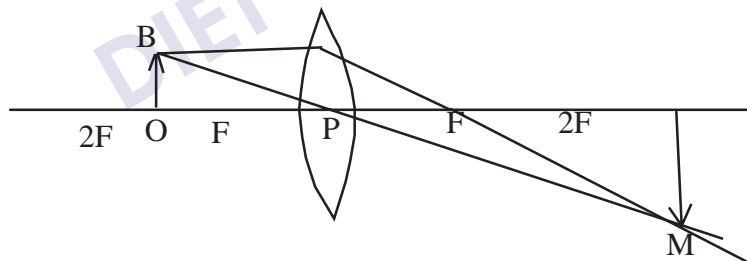
    b) Beyond 2F

    c) Rear, inverted, enlarged (Any 2)

    d) Position - Infront of the lens, between P and F of the same side.

        Nature - Virtual, Erect, Diminished

24. a) Nichrome wire, Due to hight resistance

b) Joule's law

c) R = 100 Ω,

I = 1A

t = 5 minutes = 5x60 seconds

H = I²Rt

I² x 100 x 5x 60

= 30000J

CHEMISTRY

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

CHEMISTRY

Time : 1½ Hrs.   Maximum score : 40

Instructions

* 15 minutes is given as cool-off time

* Use Cool-off time to read the questions

* Attempt the questions according to the instructions

* Keep in mind the score and the time while answering the questions.

Part I

A.   Answer any four questions from 1 to 6. Each carries 1 score.   (4x1=4)

1. The Maximum number of electrons that can be accomodated in 'd' subshell is ....

    (14, 6, 2, 10)

2. Which is the substance used to remove moisture content from Ammonia gas?

3. Which is the Anode in Zn - Ag cell?

4. Which is the Monomer of natural rubber?

5. Which is the concentration method used for concentrating Bauxite?

6. Name the functional group present in $CH_3 - O - CH_3$?

B.   Answer all questions from 7 to 9. Each carries 1 score.   (3x1=3)

7. 5 - 8% Ethanoic acid is known as ....

8. Which property of Sulphuric acid is used in the preparation of SO_2 and HCl?

9. What is the Oxidation state of Mn in MnO_2?

    (Hint. Oxidation state of Oxygen is ⁻2)

Part II

A. Answer the following questions (carries 2 score)   (1x2=2)

10. Some Sugar is taken in a watch glass and concentrated Sulphuric acid is added to it.

a) What changes occur?

b) Which property of Sulphuric acid is shown here?

B. Answer any one question from 11 to 12. (Each carries 2 score)   (1x2=2)

11. Molecular mass of water is 18.

   a) Find the number of moles in 180g water?

   b) Find out the number of molecules present in it?

12. $N_2 + 3H_2 \rightleftharpoons 2NH_3 + heat$

Write any two methods to increase the rate of forward reaction.

Part III

A. Answer any three questions from 13 to 16. (Each carries 3 scores)   (3x3=9)

13.a) Find the Oxidation state of Fe in $FeCl_3$ and write the subshell electronic configuration of Fe^{3+} ion .

   (Hint : Fe = 26)

   b) Find out the graph and period of Fe?

14. $CH_3 - CH_2 - CH - CH_3$
   $\qquad\qquad\quad |$
   $\qquad CH_3 - CH - CH_3$

   a) Write the number of Carbon atoms in the main chain?

   b) Name the branch?

   c) Write the IUPAC name of the compound?

15. The extraction of iron from its ore is done in a blast furnace?

   a) Which is the ore used here?

   b) Which are the substance fed into the blast furnace?

   c) Identify the gangue and flux here?

100

16. Complete the table related to a gas law.

Pressure (P)	Volume (V)
1 atm	80L
(a) ____atm	20L
8 atm	(b) ____

a) Write the values (a) and (b)?

b) Identify the gas law?

B.   Answer the following questions. (3 score)   (1x3=3)

17. The following are the chemical equation representing the industrial preparation of Ethanol.

A) $C_{12}H_{22}O_{11} + H_2O \xrightarrow{(A)} C_6H_{12}O_6 + C_6H_{12}O_6$

                                Glucose   Fructose

B) $C_6H_{12}O_6 \xrightarrow{(B)} C_2H_5OH + 2CO_2$

               Ethanol
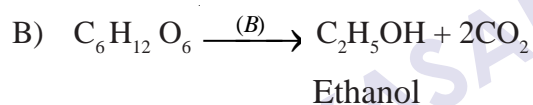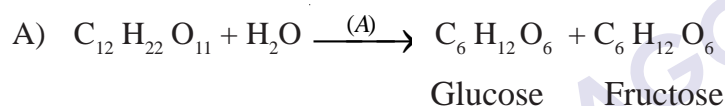
a) Identify the enzymes A and B?   (1)

b) What is rectified spirit?   (1)

c) What is power alcohol?   (1)

Part IV

A.   Answer any two questions from 18 to 20. (Each carries 4 scores)   (2x4=8)

18a) Find out the Isomeric pair from those given below.   (2)

i) $CH_3 - CH_2 - CH_2 - CH_3$

ii) $CH_3 - O - CH_2 - CH_3$

iii) $CH_3 - CH - CH_3$
          |
       CH_3

iv) $CH_3 - CH_2 - CH_2 - OH$

b) Mention the type of Isomerism in each pair?   (2)

19. Sub shell electronic configuration of an element is given below.

$1s^2\,2s^2\,2p^6\,3s^2\,3p^4$
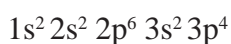
   a) Write the atomic number of this element?

   b) How many shells are present in this atom?

   c) Which is the outermost shell?

   d) Find the block and group in which this element belongs?

20. $AgNO_3$ solution, $MgSO_4$ solution, Ag rool, mg ribbon are given.

   a) Draw and label the figure of a Galvenic cell using these? (2)

   b) Write the Chemical equation of the reactions at Anode and Cathode? (2)

B. **Answer any one question from 21 to 22. (4 score)** **(1x4=4)**

21. During the electrolysis of NaCl solution.

   a) Which are the products formed at Anode and Cathode? (2)

   b) Write the Chemical equation occurs at Cathode? (1)

   c) Which is the product remains in the solution. (1)

22. Select the pecularities of 'f' block elements from the given statements.

   a) They are transition elements.

   b) Electrons are added to the anti penultimate shells.

   c) Most of them are arificial elements.

   d) Electrons are added to the penultimate shells.

   e) They include both actinoids and lanthanoids.

   f) They form coloured compounds.

   g) Used in Petroleum industry.

Part V

A. Answer any one question from 23 to 24 (5 scores)   **(5 Score)**

23. Match the following

A	B
1) $CH_2 = CH_2 + H_2 \rightarrow CH_3 - CH_3$	Polymerisation
2) $CH_3 - CH_2 - CH_3 \rightarrow CH_2 = CH_2 + CH_4$	Substitution reaction
3) $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$	Addition reaction
4) $CH_4 + Cl_2 \rightarrow CH_3Cl + HCl$	Thermal Cracking
5) $nCH_2 = CH_2 \rightarrow \dagger CH_2 - CH_2 \dagger n$	Combustion

24. Write the answers of a, b, c, d and e of the following table.   (5)

Substance	GMM	Given Mass	No.of. Moles	No.of Molecules
NO_2	....(a)......	138g	3	.....(b)....
CO	28g	14g	.....(c).....	$\frac{1}{2} \times 6.022 \times 10^{23}$
HNO3	63g	.....(d).....	2	.....(e).....

CHEMISTRY - ANSWER KEY - SET 2

Part I

A.   1.   10

2.   Calcium Oxide or CaO or quick lime

3.   Zn or Zinc

4.   Isoprene

5.   Leaching

6.   Alkoxy group

B.   7.   Vinegar

8.   Drying Agent

9.   +4

Part II

A.   10.   a)   black residue is formed

     b)   Dehydrating property

B.   11.   a)   10   b) $10 \times N_A$

12.   Increase the concentration of H_2 or N_2; remove the NH_3 formed from the system.

     (Any two points)

Part III

A.   13.   +3, $Fe^{3+} = 1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5$

14.   a) 5   b) Methyl   c) 2, 3 - di methyl pentane

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15. a) Haematite   b) Haematite Ore, Limestone, Coke

c) Gangue $\rightarrow$ Silica (SiO_2) Flux $\rightarrow$ CaO

16. a) 4 atm   b) 10L   c) Boyels Law

B.   17. a) A-Invertase, B - Zymase

b) 95.6% concentrated Ethanol is known as rectified spirit.

c) A mixture of absolute alcohol and petrol.

Part IV

18. i)   'a' and c,   b and d

ii)   'a'and c   - Chain Isomerism

b and d - functional Isomerism

19. a)   -16   b) 3   c) 3p   d) Block - P, Group 16

20. a)   Mg-Ag Cell diagram and labelling

b)   Anode - Mg $\rightarrow$ Mg2+ + 2e-

Cathode - Ag+1e- $\rightarrow$ Ag

B.   21. a)   Anode - Cl_2 gas   b) H_2 gas

b)   2Cl + 2e- $\rightarrow Cl_2$

c)   NaOH

22. b, c, e, g

Part V

23. i)   Addition reaction

ii)   Thermal Cracking

iii) Compustion

iv) Substitution reaction

v) Polymerisation

24. a) 46

b) $3 \times N_A$

c) ½

d) 126

e) $2x N_A$

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

CHEMISTRY

Time : 1½ Hrs. Maximum score : 40

Instructions

* 15 minutes is given cool-off time

* Use Cool-off time to read the questions

* Attempt the questions according to the instructions

* Keep in mind the score and the time while answering the questions.

Part I

A. Answer any 4 questions from 1 to 6. Each question carries 1 score (4x1=4)

1. Which one of the following subshells is not possible in an atom?

   (1s, 2p, 4d, 3f)

2. Identify the law in which the relationship between volume and number of molecules of a gas at constant temperature and pressure?

   (Boyle's law, Charle's law, Avagadro's law)

3. Tin stone (SnO_2) is the ore of tin. Which is the magnetic imparity present in tin stone?

4. Which of the following metal does not react with dilute acid?

   (Sodium, Iron, Copper, Magnesium)

5. Name of non-metallic compound used as a refrigerant in ice plants.

6. PVC is a polymer commonly used for making pipes. What is the name of its Monomer?

B. Answer all questions from 7 to 9. Each question carries 1 score (3x1=3)

7. Elements used as catalysts in the refining petroleum belongs to which block?

8. Name the process of the industrial prepation of Aluminium ?

9. Based on which process refining of metals like Copper and Gold is done?

Part II

A. Answer the following question (1 score)   **(1x2=2)**

10. Sulphuric acid is known as King of Chemicals.

    a)   Oleum is the product formed in the industrial preparation of Sulphuric acid. Write down its chemical formula.

    b)   Which is the catalyst used in this process?

B. Answer any 1 question from 11 to 12. (2 score)   **(1x2=2)**

11. Haematite (Fe_2O_3), Magnetite (Fe_3O_4) and Copper Pyrites ($CuFeS_2$) are some ores of metals.

    a)   Which ore is concentrated by froath floation process?

    b)   Which ore is concentrated by Magnetic separation?

12. A glass rod dipped in concentrated hydrochloric acid is shown inside a jar which is filled with ammonia gas.

    a)   Write down your observation

    b) $NH_3 + HCl \rightarrow$ ....

Part III

A. Answer any 3 questions from 13 to 16. (Each questions carries 3 score)

                                                (3x3=9)

13. The electronic configuration of the elements A, B, C, D are given below.

    A   - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$

    B   - $1s^2\ 2s^2\ 2p^6\ 3s^2$

    C   - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$

    D   - $1s^2\ 2s^2\ 2p^6\ 3s^1$

    a)   Which of these elements show +2 oxidation state?

    b)   Which element belongs to 17th group?

    c)   Which is the period number of the element A? What is the basis of your findings?

       (Symbols are not real)

14. Complete the table

Substance	GMM	Given Mass	No.of Moles	Number of Molecules
Oxigen O_2 (Molecular Mass = 32)	32g	64g	....(a)....	....(b)....
Ammonia (NH_3) (Molecular Mass = 17)	....(c)....	....(d)...	3	$3 \times 6.022 \times 10^{23}$
Water (H_2O) (Molecular Mass = 18)	18g	72g	....(e)....	....(f)...

15. The features of an organic compound are given.

*   It's an alkane

*   There are 6 Carbon atoms in the longest chain.

*   There are Methyl radicals (1 each) on the 3ʳᵈ & 4ᵗʰ carbon.

    a)   Write the structural formula of the compound?   (2)

    b)   Write the IUPAC name of the compound?   (1)
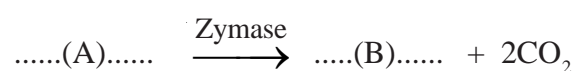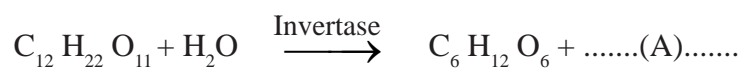
16. 5ml $AgNO_3$ is taken in a test tube and a Copper is dipped in it.

    a)   Observe the change occuring with the copper rod?   (1)

    b)   Complete the equation of the reaction?   (2)

    $Cu + 2\,AgNO_3 \rightarrow$ .... + ...
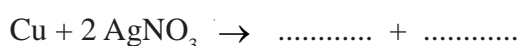
B.   **Answer the following question. (3 score)**   **(1x3=3)**

17. Some reactions regarding the production of an alcohol are given below.

$C_{12}H_{22}O_{11} + H_2O \xrightarrow{\text{Invertase}} C_6H_{12}O_6 + ...(A).......$

$......(A)...... \xrightarrow{\text{Zymase}} .....(B)...... + 2CO_2$

    a)   Identify A and B?   (1)

    b)   Write the name of the ester formed when the product B reacts with ethanoic acid?   (1)

    c)   Write the Chemical equation for the formation of that ester.   (1)

Part IV

A. Answer any 2 questions from 18 to 20. Each question carries 4 score.

(2x4=8)

18. A portion of the periodic table is given below. The symbols given are not real.

A	B
C	D
	2, 8, 7

a)   Write the electronic configuration of B and C?   (1)

b)   Find the atomic number of A and C?   (1)

c)   Which elements have the same valency? What is their valency?   (1)

d)   The valency of the element X is 1. Write the chemical formulae of the compound formed when the element X combines with A.

19. i) Complete the woed web.

2 GAM   ....(a)... Atoms

28g Nitrogen gas

...(b)... GMM   ....(c).... N_2 Molecules
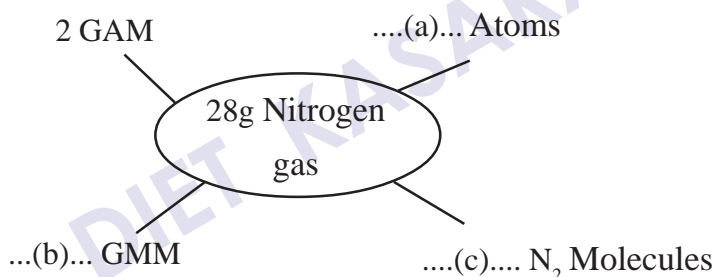
(ii) Write down the Avagadro number.

20. The picture of a Galvanic cell is given below.

Ag rod (Silver rod)

A

CuSO$_4$ Solution

B

Salt Bridge
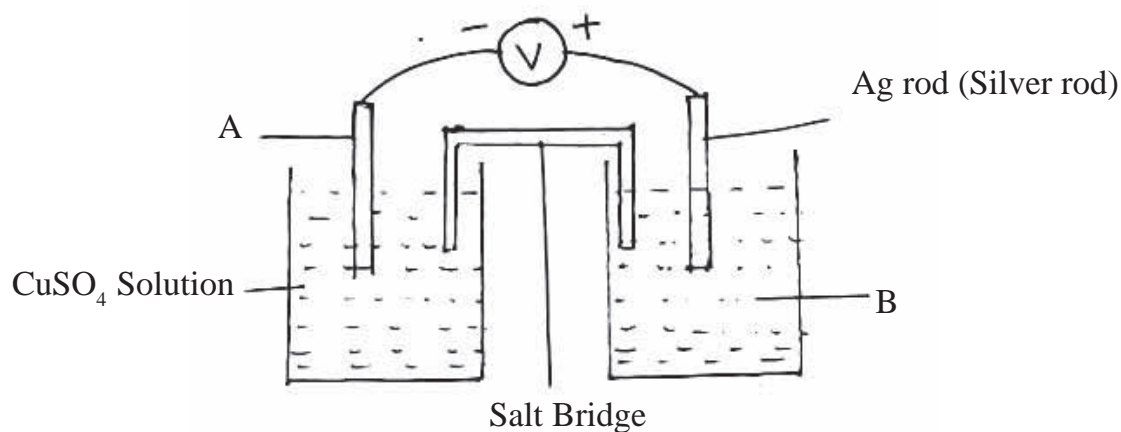
a) Identify A and B?

b) Give the direction of electron flow?

c) Write the chemical equation at the anode and cathod?

B. Answer any 1 question from 21 to 22 (4 score) **(1x4=4)**

21. Iron is industrially prepared mainly from Haematite.

a) Which substance reduces haematite in the metallurgy of iron?

How is this reducing agent is produced in furnace? (2)

b) Which is the main impurity found in haematite?

Which substance is used to remove this gangue? (2)

22 a) Analyse the given organic compounds and answer the following questions.

(i) $CH_3 - O - CH_2 - CH_3$

(ii) $CH_3 - O - CH_3$

(iii) $CH_3 - CH_2 - CH_2 - OH$

(iv) $CH - CH - CH_3$
$\qquad |$
$\qquad OH$

a) Identify the isomer pairs. Write the type of isomerism observed in them?

b) Write the IUPAC name of the compound (i)?

Part V

A. Answer any 1 question from 23 to 24. (5 score) **(1x5=5)**

23.a) Match the following (4)

Reactants	Products	Name of the reactions
(i) $CH_4 + Cl_2$	$\dagger CH_2 - CH_2 \dagger_n$	Thermal cracking
(ii) $C_2H_6 + O_2$	$CH_3Cl + HCl$	Polymerisation
(iii) $nCH_2 = CH_2$	$CH_3 - CH_2 - CH_2 - CH_3$ + $CH_3 - CH = CH_2$	Combustion
(iv) $CH_3 - CH_2 - CH_2 - CH_2 - CH_2 - CH_2 - CH_3$	$CO_2 + H_2O$	Substitution reaction

b) Which is the main component in LPG? (1)

111

24. The main chain of an alkane without branch is given.

      C - C - C - C

  a)   Complete the structural formulae.

  b)   Write the IUPAC name of this compound?

  c)   -COOH is added as functional group to the first carbon?

      If so,

      i) Write the structural formulae of the compound?

      ii) Write the IUPAC name of that compound?

  d)   What is the name of the compounds having -COOH as functional group?

CHEMISTRY - ANSWER KEY - SET 3

Part I

A. 1. 3f

2. Avagadro's Law

3. Iron Tungstate

4. Copper

5. Ammonia

6. Vinyl Chloride

B. 7. f Block

8. Hall-Heroult Process

9. Electrolysis

Part II

A. 10. a) $H_2S_2O_7$

b) Vanadium Pentoxide

B. 11. a) Copper Pyrites

b) Magnetite

12. a) Dense white fumes are forming

b) $NH_3 + HCl \rightarrow NH_4Cl$

Part III

A. 13. a) B

b) C

c) Periodic number 3. The period number is same as the shell number of the outermost shell in the subshell electronic configuration.

14. a) 2

b) $2 \times 6.022 \times 10^{23}$

c) 17g

113

d) 51g

e) 4

f) $4 \times 6.022 \times 10^{23}$

15. a)

$CH_3 - CH_2 - CH - CH - CH_2 - CH_3$
$\qquad\qquad\quad CH_3 - CH_3$

b) 3, 4 - Dimethyl hexane

16. a) Silver gets deposited at the copper plate.

b) $Cu + 2AgNO_3 \rightarrow Cu(NO_3)_2 + 2Ag$

B. 17. a) A - $C_6H_{12}O_6$ \qquad B - $CH_3 - CH_2 - OH$ (C_2H_5OH)

b) Ethyl ethanoate

c) $CH_3 - COOH + CH_3 - CH_2 - OH \rightarrow CH_3 - COO - CH_2 - CH_3 + H_2O$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ Ethyl Ethanoate

Part IV

18. a) B - 2, 7

C - 2, 8, 6

b) Atomic number of A - 8

Atomic number of C - 16

c) AC & BD

Valency of A & C - 2

Valency of B & D - 1

d) X_2A

19i) a) $2 \times 6.022 \times 10^{23}$ atoms

b) 2 GMM

c) 6.022×10^{23} molecules

ii) 6.022×10^{23}

20. a) A - Copper rod

B - $AgNO_3$ solution

b) From Copper rode to Silver rod

c) Anode

$Cu \rightarrow Cu^{2+} + 2e^-$

Cathode

$Ag^+ + 1e^- \rightarrow Ag$ or $2Ag^+ + 2e^- \rightarrow 2Ag$
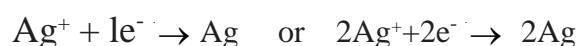
B   21. a) Carbon monoxide

Coke(c) reacts with Oxygen and form CO_2.
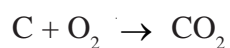
$C + O_2 \rightarrow CO_2$

CO_2 combines with more Carbon & produce CO

b) Silica (Silicon dioxide - S_1O_2)

CaO (Calcium Oxide) is used to remove Silica.

22.i) Isomer pairs

$CH_3 - O - CH_2 - CH_3$ & $CH_3 - CH_2 - CH_2 - OH$

$CH_3 - O - CH_2 - CH_3$ & $CH_3 - \underset{\underset{OH}{|}}{CH} - CH_3$

- Functional Isomerism

$CH_3 - CH_2 - CH_2 - OH$ & $CH_3 - \underset{\underset{OH}{|}}{CH} - CH_3$
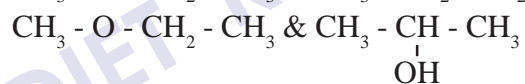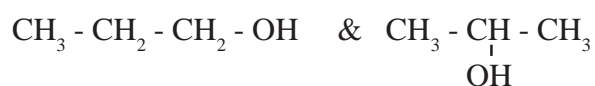
- Position Isomerism

ii) Methoxy ethane

Part V

A   23.i) $CH_4 + Cl_2 \rightarrow CH_3Cl + HCl$ - Substitution reaction

$C_2H_6 + O_2 \rightarrow CO_2 + H_2O$ - Combustion

$nCH_2 = CH_2 \rightarrow [CH_2CH_2]_n$ - Polymerisation

$CH_3 - CH_2 - CH_2 - CH_2 - CH_2 - CH_2 - CH_3 \rightarrow CH_3 - CH_2 - CH_2 - CH_3 + CH_3 + CH = CH_2$

Thermal cracking

     ii)   Butane

24.   a) $CH_3 - CH_2 - CH_2 - CH_3$ (Butane)

     b)   Butane

     c) $CH_3 - CH_2 - CH_2 - CH_2 - COOH$

Pentanoic acid

     d)   Carboxylic acids

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

CHEMISTRY

Time : 1½ Hrs.

Maximum score : 40

Instructions

* 15 minutes is given cool-off time

* Use Cool-off time to read the questions

* Attempt the questions according to the instructions

* Keep in mind the score and the time while answering the questions.

PART I

A. Answer any four questions from 1 to 6. Each carries 1 scaore **(4x1=4)**

1. 3s, 4s subshells are given.Which subshell has more energy?

2. Which gas law shows the relation between volume and pressure at constant temperature?

3. Which is the general formula of Alkenes?

4. 6.022×10^{23} is known as ....

5. Write the Monomer of PVC (Poly Vinyl Chloride)

6. What is the energy change in Galvanic Cell?

B Answers all the qustions from 7 to 9 (1 score each) **(3x1=3)**

7. What is the volume of any gas at STP known as?

8. What is the number of mole present in 44.8L of any gas at STP?

9. The electrode at which reduction takes place in an electrolytic cell is ....

PART II

A. Answers the following questions (score 2) **(1x2=2)**

10. a) Which compound is added to Alumina during the electrolyte preparation of Aluminium?

 b) Explain why it is done?

B. **Anwer any one of the question from 11 to 12 (score 2)** **(1x2=2)**

11. Write answers for the given questions related to Zn - Cu Galvanic cell.

    a) Which Metal is acting as anode

    b) Write the Chemical equation for the reaction at anode?

12. A little Ammonium Chloride (NH_4Cl), and Calcium hydroxide ($Ca(OH)_2$) are taken in an watch glass and mixed well.

    a) Which gas is formed here?

    b) Write its chemical nature?

PART III

A **Answer any 3 questions from 13-16.** **(3x3=9)**

13. The Atomic number of element M is 17.

    a) Write the complete sub shell electronic configuration of M?

    b) In which block the element belongs to?

    c) Write the molecular formula of the compound formed when it combines with N, which belongs to 1st group? (Symbols are not real)

    (Symbols are not real)

14. Answer the following questions related to the large scale preparation of Iron (Fe)

    a) Name the ore used in the Extraction of Iron?

    b) Why is limestone is added during this process?

    c) Write the chemical formula of the slag removed from blast furnace?

15.

$$CH_3 - CH - CH_2 - CH_2$$
$$\quad\quad\; | \quad\quad\quad\quad |$$
$$\quad\quad CH_3 \quad\quad\quad CH_3$$
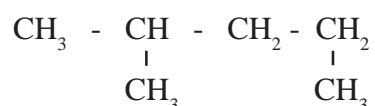
    Answer the following questions based on the hydrocarbon given above.

    a) Write the number of Carbon atoms present in the longest chain?

    b) Name branch in this compound?

    c) Write the IUPAC name of this compound?

16. Combination of smaller molecules to form a very large chain like molecule is called Polymerisation.

    a) What are the smaller molecules taking part in this reactions called?

    b) Which is the monomer unit of Polythene?

    c) Give any one use of Polythene?

B   Answer the following questions. (3 score)   (1x3=3)

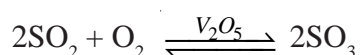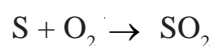17. Chemical equations for the Industrial preparation of Sulphuric acid is given

$$S + O_2 \rightarrow SO_2$$

$$2SO_2 + O_2 \xrightarrow{V_2O_5} 2SO_3$$

$$SO_3 + H_2SO_4 \rightarrow H_2S_2O_7$$

a) Name the compound $H_2S_2O_7$ formed during this process?

b) In which other name this acid known as?

c) Name the products formed during the dehydration reaction of Sulphuric acid with Sugar?

PART IV

A.   Answer any two questions from 18 to 20 (4 score)   (2x4=8)

18. 28g Nitrogen is given in a sample

    (Atomic mass of N is 14)

    a) What is the number of moles of Nitrogen present in it?

    b) How many atoms are present in this sample?

    c) Find out the numbers of molecules present in it?

    d) Write the Avagadro number?

19. Copper plays a very important role in our daily life.

    a) Name one ore of Copper?

    b) By which process Copper is refined?

    c) Name the electrolyte used in this process?

    d) Write the Chemical equation for the reaction taking place at Cathode?

20. Match the coloums B and C with coloumn A.

A	B	C
$H_2 + I_2 \rightleftharpoons 2HI$	Irreversible Reaction	Products get converted into reactants.
$NaOH + HCl \longrightarrow NaCl + H_2O$	Reversible Reaction	Products are not get converted into reactants.

B. **Answer any one of the questions from 21 to 22 (4 score)** (1x4=4)

21. Write the answers based on the electro plating of Iron bangle with gold.

   a) Which is the electrolyte used here?

   b) Identify the Cathode and Anode?

   c) What happens to the gold ions reached on the bangle?
      (Oxidation / reduction)

   d) What happens to the gold plate?
      (Oxidation / reduction)

22. Ethanol is a very important Solvent in Industry.

   a) Name 8-10% solution of ethanol?

   b) What is denatured spirit?

   c) Write any two uses of ethanol?

   d) Name the enzymes present in yeast during the process of Fermentation?

PART V

A. **Answer any one from 23 to 24. (Score 5)** (1x5=5)

23. The Subshell electronic configuration of $_{29}Cu$ is given.

   i) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^9, 4s^2$

   ii) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^1$

   a) Which is the correct subshell electronic configuration?

   b) Justify your answer?

   c) In which block the element belongs to?

d) Write any one property of elements of this block?

e) Write the group and period of this element?

24. C_2H_4, C_3H_6, C_4H_8, ... are members of a homologous series.

a) Name this homologes series?

b) Write the Chemical formula of the next member?

c) What is the general formula of these compounds?

d) Write the structure of C_2H_4?

e) Write the structural formula and IUPAC name of the compound formed when C_2H_4 reacts with H_2.

CHEMISTRY - ANSWER KEY - SET 4

Part I

A. 1. 4s

2. Boyel's Law

3. $C_n H_{2n}$

4. Avagadro Number

5. Vinyl Chloride

6. Chemical Energy $\longrightarrow$ Electrical Energy

B. 7. Molar Volume

8. $\dfrac{44.8}{22.4}$ = 2 Mole

9. Cathode

Part II

A. 10a) Cryolite

b) To decrease the melting point of Alumina

B. 11a) Zn

b) Zn $\longrightarrow$ $Zn^{2+} + 2e^-$

12a) Ammonia

b) Basic

Part III

A. 13a) $1s^2$, $2s^2$, $2p^6$, $3s^2$, $3p^5$

b) P block

c) MN

14a) Hematite

b) Remove Sand SiO_2

c) Ca Si O_3

15. a) 5

 b) Methyl

 c) 2-Methyl Pentane

16. a) Monomers

 b) Ethene

 c) Covers/Carry bags

B.

17. a) Oleum

 b) Sulphuric acid

 c) Carbon

Part IV

A. 18. a) 1 mole ($\frac{28}{28}$ = 1 mole)

 b) $2 \times 6.022 \times 10^{23}$ Atoms $2N_A$

 c) $1 \times 6.022 \times 10^{23}$ Molecules $1N_A$

 d) 6.022×10^{23}

19. a) Copper Pyritis/Cuprite

 b) Electrolysis

 c) Copper Sulphate

 d) $Cu^{2+} + 2e \longrightarrow Cu$

20.

A	B	C
$H_2 + I_2 \rightleftharpoons 2HI$	Reversible Reaction	Products converts in to Reactants
$NaOH + HCl \longrightarrow NaCl + H_2O$	Irreversible Reaction	Products not converts in to Reactants

B. 21. a) Sodium Cyanide + Gold Cyanide

 b) Cathode - Iron Bangle

 Anode - Gold

c) Reduction

d) Oxidation

22. a) Wash

b) The poisonus methanol mixed with ethanol to prevent the mis use of ethanol.

c) Paints, Varnish, Organic solvents.

d) Invertase, Zymase

Part V

A. 23. a) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^1$

b) Half filled or full filled d-subshells shows more stable than the other electronic configuration.

c) In d-block

d) * Produce coloured compounds

* Shows variable valency

e) Group 11, Period 4

24. a) Alkene

b) C_5H_{10}

c) C_nH_{2n}

d) $CH_2 = CH_2$

e) $CH_2 = CH_2 + H_2 \longrightarrow CH_3 - CH_3$

IUPAC Name is Ethane.

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

CHEMISTRY

Time : 1½ Hrs.   Maximum score : 40

Instructions

*   15 minutes is given cool-off time

*   Use Cool-off time to read the questions

*   Attempt the questions according to the instructions

*   Keep in mind the score and the time while answering the questions.

Part I

A. Answer any four questions from 1 to 6. (1 score each)   (4x1=4)

1. The maximum number of electrons occupied by 'P' subshell is ......

   (14, 6, 10, 2)

2. Which is the mathematical expression of Boyl's law from the given expressions.

   $$(PV = constant, \quad \frac{V}{T} = constant, \quad \frac{V}{n} = constant)$$

3. From the given elements, which one is less reactive?

   (Na, Zn, Ag)

4. Calamine is the ore of ....

5. The density of ammonia is .... compared to that air.

   (Low / High)

6. Name the polymer used to line the inside of non-stick vessels.

B. Answer all the questions from 7 to 9. (1 score each)   (3x1=3)

7. In which block lanthanoid and actinoids belong?

8. Name the substance obtained by mixing methanol and ethanol to prevent from mis use as beverage?

9. Which solution is used as electrolite for plating gold on an iron bangle?

Part II

A.   Answwer the given questions (score 2)   **(1x2=2)**

10. a)   Name the substance formed by the reaction of a carboxylic acid with alcohol?

   b)   Write any one pecularity in their property?

B.   Answer any one question from 11 to 12 (score 2)   **(1x2=2)**

11. Size of balloon increased on blowing.

   a)   On the basis of which gas low it can be explained?

   b)   State the law?

12. See the electronic configuration of an atom with atomic number 12 written by children.

   A - $1s^2\, 2s^2\, 2p^6\, 3s^2$

   B - $1s^2\, 2s^2\, 2p^6\, 2d^2$

Which one is correct? Why?

Part III

A.   Answer any three questions from 13 - 16 (3 score each)   **(3x3=9)**

13. 85g of ammonia gas is stored at STP.

   a)   Calculated the number of molecular present in it?

   b)   Find out its volume

   c)   Find out the number of atoms present in this sample?
         (Molecular mass of ammonia is 17)

14. Some metals and salt solutions are given.

> $MgSO_4$ solution, $CuSO_4$ solution, $AgNO_3$ solution
>
> KNO_3 solution,   Pb rod   Cu rod,   Mg rod, Pb rod)

   a) Select the substance required for the construction of galvanic cell?

   b) Which metal is anode in the cell constructed?

   c) Write the chemical equation for the reaction taking place at cathode?

15. Observe the graph of chemical reaction and answer the following questions.
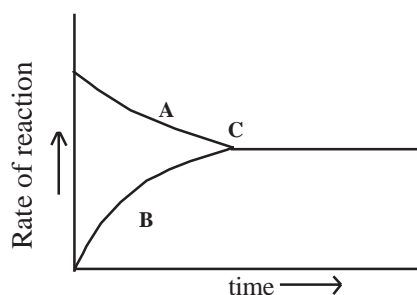
a) What do 'A' and 'B' represent?

b) What do 'C' represent?

c) What happen to the rate of forward and backward reaction at 'C'?

16. Chemical formula of some hydrocarbon are given.

C_4H_8, C_2H_6, C_3H_4, CH_4, C_5H_{10}, C_6H_{10}

a) Which is an alkene?

b) Write the general molecular formula of alkane?

c) Write the molecular formula of an alkyne with 5 carbon atoms from these?

B. **Answer the question (3 score)**   (1x3=3)

17. During the electrolysis of NaCl,

a) Which substance is liberatd at anode?

b) Which is liberated at cathode?

c) Write the chemical equation for the reaction taking place at anode?

Part IV

A **Answer any 2 questions from 18-20 (4 score each)**   (2x4=8)

18. $CH_3 - CH_2 - CH - CH_2 - CH_2 - CH_3$
$\qquad\qquad\quad |$
$\qquad\qquad CH_2 - CH_3$
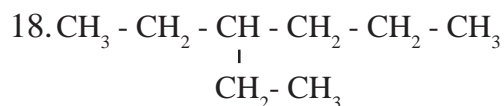
a) Write the root name of the main chain?

b) Write the position of branch?

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c) What is the name of the branch?

d) Write the IUPAC name of the compound?

19. Chemical reaction of certain hydrocarbon are given.

a) $2C_4H_{10} + 13O_2 \rightarrow 8CO_2 + 10H_2O$

b) $CH_3 - CH_2 - CH_2 + Cl_2 \rightarrow CH_3 - CH_2 - CH_2Cl + HCl$

c) $CH_3 - CH_2 - CH = CH_2 + H_2 \rightarrow CH_3 - CH_2 - CH_2 - CH_3$

d) $nCH_2 = \underset{Cl}{CH} \rightarrow \left[CH_2 - \underset{Cl}{CH_2} \right]_n$

1) Which represents displacement reaction?

2) Which shows combustion?

3) Which shows polymerisation?

4) Draw the structure of teflon?

20. Complete the table given below.

Element	Atomic number	Subshell electronic configuration	block	group	period
Na	11	$1s^2 2s^2 2p^6 3s^1$	s	1	3
Cl	17	$1s^2 2s^2 2p^6 3s^2 3p^5$	p	..(a)..	3
Mn	25	$1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$	..(b)..	7	4
Zn	30	$1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2$	d	...(c)...	...(d)...

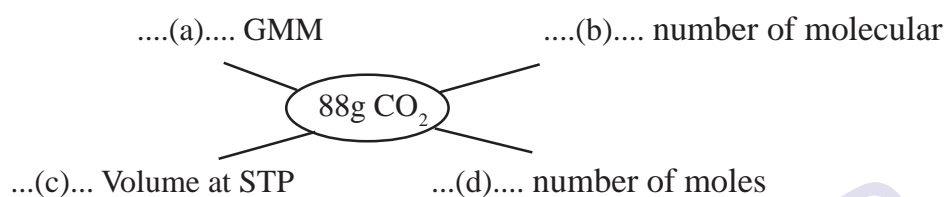**B.** **Answer any one from 21 - 22 (score 4)**   **(1x4=4)**

21. Structure of some hydrocarbons are given/

1) $CH_3 - CH_2 - O - CH_3$

2) $CH_3 - CH_2 - CH_2 - OH$

3) $CH_3 - CH_2 - CH_2 - CH_3$

a) Write the position isomer of second compound?

b) Find out the functional isomer from them?

c) Write the chain isomer of compound (iii)?

d) Write the IUPAC name of first compound?

22. Find out a, b, c and d

....(a).... GMM   ....(b).... number of molecular

88g CO_2

...(c)... Volume at STP   ...(d).... number of moles

Part V

A.   Answer any one question from 23 to 24. (score 5)   **(1x5=5)**

23. Chemical reaction in a blast furnace during the preparation of iron is given,

   i) $C + O_2 \rightarrow CO_2 + heat$

   ii) $CO_2 + C + heat \rightarrow CO$

   iii) $Fe2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

   iv) $CaCO_3 + heat \rightarrow CaO + CO_2$

   v) $CaO + SiO_2 \rightarrow CaSiO_3$

   a)   Which reaction shows the reduction of iron ore?

   b)   Which compound is acting as flux here?

   c)   Which shows the formation of slag?

   d)   Name the slag formed here?

   e)   Name the ore deposited in blast furnace?

24. Match the name of the given compounds.

a)	$CH_3 - CH_2 - CH - CH_3$ 　　　　　　$|$ 　　　　　　CH_3	Butain - 2 - 01
b)	CH_3 　　　　$|$ $CH_3 - C - CH_3$ 　　　　$|$ 　　　CH_3	Pent - 2 - ene
c)	$CH_3 - CH_2 - CH = CH - CH_3$	2 - Methyl butane
d)	$CH_3 - CH_2 - CH - CH_3$ 　　　　　　$|$ 　　　　　　OH	Methoxy ethane
e)	$CH_3 - CH_2 - O - CH_3$	2 - 2 Di Methyl propane
		2 - Methyl pentane
		Propan - 1 - 01

CHEMISTRY - ANSWER KEY - SET 5

1. 6

2. PV = Constant

3. Ag

4. Zinc

5. Low

6. Teflon

7. f - block

8. Methylated spirit

9. Mixture of sodium cynide and gold cyanid

10. a)   Ester   b) They are having smell of fruits and flowers

11. a)   Avagadro's law

    b)   State the law

12. A - $1s^2 2s^2 2p^6 3s^2$ because there is no 2d subshell

13. a)   5 mole, $5 \times 6.022 \times 10^{23}$, $5N_A$

    b) 5×22.4 / 112.0L

    c) $4 \times 5 \times 6.022 \times 10^{23}$

14. a) $Mg/MgSO_4$ and $Cu/CuSO_4$

    b)   Mg

    c) $Cu^{2+} + 2e^- \rightarrow Cu$

15. a)   A - forward reaction   B - backward reaction

    b)   Equilibrium

    c)   Both become equal

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16. a) C_5H_{10}

    b) CuH_2n+2

    c) C_5H_{10}

17. a) Cl_2

    b) Na

    c) $2Cl^- \rightarrow Cl_2 + 2e^-$

18. a) hex

    b) 3

    c) Ethyl

    d) 3 - Ethyl hexane

19. a) (ii)

    b) (i)

    c) (iv)

    d)
    $$\left[\begin{array}{c} \overset{\displaystyle F}{\underset{\displaystyle F}{|}} \\ -C- \\ | \end{array} \quad \begin{array}{c} \overset{\displaystyle F}{\underset{\displaystyle F}{|}} \\ -C- \\ | \end{array}\right]_n$$

20. a) 17

    b) 'd'

    c) 12

    d) 4

21. a) $CH_3 - \underset{\underset{\displaystyle OH}{|}}{CH} - CH_3$

    b) (i) and (ii)

    c) $CH_3 - \underset{\underset{\displaystyle CH_3}{|}}{CH_3} - CH_3$

    d) Methoxy ethane

22. a) 4GMM   b) $4 \times 6.022 \times 10^{23}$ c) 4×22.4 L   d) 4

23. a) 3 b) CaO   c) (5)   d) Calcium Silicate

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SOCIAL SCIENCE

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

Time : 2½Hrs.   **SOCIAL SCIENCE**   Maximum score : 80

Instructions:

* 15 minutes is given cool-off time
* Use Cool-off time to read the questions and plan your answers.
* Attempt the questions according to the instructions
* Keep in mind, the score and the time while answering the questions.
* The maximum score for questions from 1 to 35 will be 80.

PART I

A.   Answer any four questions from 1 to 6. Each carries 1 mark   (4x1=4)

1.   Which among the following river is orginated from Nasik district of Maharashtra?

(Krishna, Mahanadi, Godavari, Narmada)

2.   Identify the agency in India which is responsible for preparing topographic map?

(Remote sensing agency, Survey of India, Indian Regional Navigation

Sattellite, , Physical Research Laboratory)

3.   Which line is known as primemeridian?

(0^0 longitude, 180^0 longitude,

$82½^0$ longitude, 120^0 longitude)

4.   Where was the first conference of the Non-aligned countries held?

(Bandung, Yugoslavia, Belgrade, Indonesia)

5.   In which series of the satellite are Geostationary Satellites?

(INSAT, IRS, IRNSS, QIS)

6.   Which among the following princely state has not agreed for signing the instrument of Accession?

(Hyderabad, Avadh, Jhansi, Nagpur)

B.   Answer all the questions from 7 to 10. Each carries 1 score   (4x1=4)

7.   Which Indian city is termed as 'Cottonopolis'?

(Kandla, Kolkatta, Mumbai, Ahammadabad)

8.   In which angle the earth axis is tilted in the orbital plane?

($23½^0$, $66½^0$, $82½^0$, 0^0)

9. Difference between the value of two adjacent contours is called?

   (Contour value, Contour interval, Foamline, Spot height)

10. Which among the following is not included the quantitative feature of human resources?

    (Population density, age structure, life expectancy, dependency ratio)

PART II

A. Answer any three questions from 11 to 15. Each carries 2 score   (3x2=6)

11. Suggest any two ways for overcome the challenges faced by civic consciousness?

12. What are the goals of ICDS?

13. Mention any two rights included in the Consumer Protection Act 1986?

14. Write any four features of permanent land revenue settlement?

15. Explain the importance of international Date line?

B. Answer any two questions from 16 to 18. (Each carries 2 score)   (2x2=4)

16. Define the term Utharayanam and Dakshinayanam?

17. Write the two types of soils found in peninsular plateau?

18. What was the role played by Raja Ram Mohan Roy in modernisation of Indian Society?

PART III

A. Answer any three questions from 19 to 23. Each carries 4 score   (3x4=12)

19. What is the difference between participant observation and non-participant observation?

20. What is the significance of public administration?

21. What is GST? What are the different kinds of GST?

22. Mark and label the following on the outline map of India provided.

    a)   Aravally mountain

    b)   Chottanagpur plateau

    c)   Kandla port

    d)   Narmada River

23. Find out the location of tubewell and grave in the given grid, using the 4 figure grid reference method.
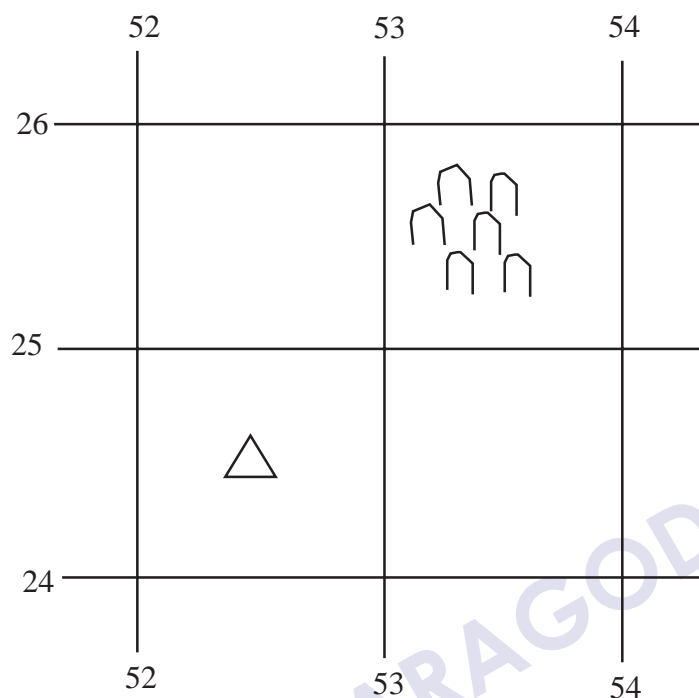
B. **Write answer any one of question from 24 to 25. Each carries 4 score (4x1=4)**

24. Bifurcate the following source of energy into conventional source of energy and non-conventional source of energy?

(Biogas, Coal, Solar energy, Petroleum)

25. Match the coloumn A & B

A	B
a. Santhal Revolt	Dadabai Naroji
b. Mappila rebellion	Balagangadhara Tilak
c. Drain theory	Malabar
d. Father of Indian Unrest	Rajmahal hills

PART - IV

A. **Answer any three questions from 26 to 29. Each carries (6 score)   (3x6=18)**

26. Explain different types of deposits accepting by commercial banks?

27. Indian peninsula bifurcate the south-west mansoon wind into two branches. What are they? How it influence the Indian climate?

28. What are the major theories on the Origin of state? Explain any two.

29. Write a brief note about the struggles held against the social inequalities in Kerala based on the following hints:

   a) Channar revolt

   b) Vaikkam Sathyagraha

   c) Guruvayoor Sathyagraha

B.   Answer any two questions from 30 to 32. Each carries 6 score   (6x2=12)

30. What were the causes that led to the second world war? Write its effects also.

31. What is meant by Geographic information system? List out its uses.

32. Which are the educational commissions appointed in India to study about Indian education? Write the major recommendations of these commissions?

PART - V

A. Answer any two questions from 33 to 35. Each carries 8 score.   (2x8=16)

33. Write about French revolution based on the following indicators.

   a) Causes led to the French Revolution

   b) Influence of the French Revolution

34. Write the features of National movements which was led by Mahathma Gandhi, based on the following points.

   a) Non-Cooperation movement

   b) Civil Disobedience movement

35. Based on the global pressure belt, answer the following questions.

   a) Write the name of the global pressure belts?

   b) What are the factors responsible for the formation of Global pressure belts.

   c) Write about the formation of any one of the Global pressure belt?

SOCIAL SCIENCE

Set 2 : Answer Key

1. Godavari (1)

2. Survey of India (1)

3. 0^0 Longitude (1)

4. Belgrade (1)

5. INSAT (1)

6. Hyderabad (1)

7. Mumbai (1)

8. $66\frac{1}{2}^0$ (1)

9. Contour interval (1)

10. Life expectancy

11. • Each one should evaluate his activities critically

    • Should work for one's interest without going against public interest

    • Be the change we expect from others

    • Equal weight should be given to both right and duties

    • Individuals should act democratically and tolerably. (any two) (2)

12. • To ensure integrated development of children up to 6 years.

    • To provide healthcare for pregnent and lactaing women (2)

13. • The right to be protected

    • The right to be informed about the quality related
      aspects of goods and services

    • The right to have access to goods and services at fair prices

    • The right to be heard and to seek redressal at appropriate forums

    • The right to consumer education (any two) (2)

14. • Tax was collected by Zamindars

    • Zamindars was the owner of the entire land where he had
      the jurisdiction to collect tax.

    • While the Zamindars became the owners of the land, the
      actual farmers became tenants.

- Farmers were to pay up to 60% of yield as tax.

- Tax was to be paid even at the time of poor yield

- The tax was to be paid in cash strictly before the
  cut off date (any two) (2)

15. 180^0 Longitude

Avoid land areas and pass through ocean.

There is a difference of 24Hrs at 180^0 longtitude to the

east and west of the Greenwich. (2)

16. Utharayanam : Following the winter solstice the sun sets its

north ward apparent movement from Tropic of capricon (23½^{0}S)

and it culminates on Tropic of cancer (23½^{0}N) on 21 June. This

northward apparent movement of sun is called as 'Utharayanam'

Dakshinayanam : Following the summer solstice, the sun set its

southward apparent movement from Tropic of cancer (23½^{0}N) and

it culminates on Tropic of capricon (23½^{0}S) on 22nd December.

This southward apparent movement of the sun termed as Dakshinayanam. (2)

17. Red soil, Laterite soil, Black soil or Cotton soil

(any two) (1)

18.
- Oppose caste system

- Oppose sati system

- Established Brahmasamaj

- To Improve the status of women (1)
  (Any two)

19. Participant Observation

When the researcher himself / herself collect information

directly from the area under study.

Non participant observation

The researcher does not stay with the group under study.

They are observed from out side. (4)

20. • Formulated government policy

     • Ensure welfare of the people

     • Provide goods and services

     • Find out solution to public issues   (4)

21. Goods and services tax merging different indrect taxes

     imposed by central and state governments.

     Tax is collected only on value addition.

     Central GST

     State GST

     Integrated GST   (4)

22. See the map   (4)

23. 5214 Tube well

     5325 Grave   (4)

24. Conventional - Coal, petroleum

     Non-Conventional - Biogas

                        Solar energy   (4)

25. Santhal Revolt - Rajmahal Hills

     Drain theory - Dadabai Navroji

     Mappila Rebellion - Malabar

     Father of Indian unrest - Balgangadhara Tilak   (4)

26. Current deposit - depositing and withdrawing money

     many times in a day

     No interest

     Fixed deposit - Deposit specific period of time

     Specified interest rate

     Withdrawn money subject to restrictions   (6)

27. a. Arabian sea branch

     b. Bay of Bengal branch

     Arabian sea brach - that reaches the coast of Kerala by

     early June causes heavy rain fall Karnataka, Goa, Maharashtra

     and Gujarat causes rainfall   (3)

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Bay of Bengal branch - enters

The Ganga plains and causes rainfall in west Bengal, Bihar

Uttarpradesh etc. This branch merging with Arabian sea branch

in the Punjab plains advances north further and

causes heavy rainfall, along the foot hills of Himalaya.   (6)

28. Divine Right theory

State is the creation of God.

Evolution theory - state is the product of history.

It was formed by social evolution.

Social Contract theory

State came into existance as a result of a contact by the

people. State was constituted for the fullfillment of human

needs.

Power theory

State came into existance as a result of the establishment of

power by the strong over the weak.   (6)

29. Channar Revolt : To gain right to wear Jackets.

Vaikkam Sathyagraha - To get the right to walk through

roads around the vaikom temple, T.K. Madhavan, Mannath

Padmanabhan - to enter into the tembles- Guruvayoor Sathyagraha - To get
all castes.

A.K. Gopalan, K. Kelappan, P. Krishna Pillai   (6)

30. • Emergence of Fascism and Nazism

• The Treaty of versailles

• Appearement policy

• Military alliance

Axis powers & Allied powers

• Failure of League of Nations

• Attacked Poland   (4)

Effects

• Over 10 million people died

- Economic system of European countries was destroyed.
- European dominance in world diminished
- America and Soviet union emerged as global towers (6)
- UNO was formed

31. Geographic information system is a computer based information management system by which the data collected from the sources of information like map, aerial photographs, satellite imageries analysed and displayed in the form of maps, tables and graphs.

Uses:

1) Collect data from different sources.

2) Update and incorporate data easily

3) Conduct thematic studies

4) Represent geographical features spatially.

5) Generate visual models of future phenomena and processes based on the data collected

6) Prepare maps, tables and graphs (6)

32. Radhakrishnan Commission - 1948

- To study Universily education
- Start professional educational institutions
- Give emphasis to women education
- UGC

Lakshmana Swami Mudaliar 1952

- To secondary education
- Impliment three language formula
- Establish multi purpose schools (2)

Kothari Commission - 1964

- To propose a national pattern of education
- Implimented 10+2+3 pattern of education
- Start vocational education
- Focus on value education (2)

33. Causes

- Autocratic rule of kings
- The social and economic inequality (Three estates)
- The luxurious and extravagent life of kings
- Influence of thinkers

    (Voltaire, Montesque, Rousaew)

- Liberty, equality, fraternity slogan   (4)

Influence of French Revolution

- Stimulated later revolutions in the world.
- Ended the Feudal system in Europe
- Led to the emergence of Nationalism
- Contribute the concept of sovereignity
- Helped the growth of the middle class
- Threatened the autobrafic rulers in Europe   (4)

34. Non-Cooperation movement

- Lawyers shall boycott court
- Public shall boycott foriegn products
- Returning the British award and prizes
- Denail of Taxes
- Student shall boycott English schools   (2)

Constructive programmes

- Made indegeneous products
- Establish national schools
- Popularise Hindi and Khadi
- Eradicate untouchability   (2)

Civil Disobedience movement

- To lift salt tax
- To declare 50% tax relaxation for farmers
- To increase the tax on imported foreign clothes

- To cut short military budgets and high salary of top officials.
- To release political prisoners
- To start coastal shipping service   (4)

Salt Sathyagraha

Salt as a powerful weapon against the British

Salth tax constituted two fifth portion of the income

collected by the British through taxes   (3)

35. Equatorral low pressure belts 0^0

Sub tropical high pressure belt (30^0 N & 60^0 S)

Sub - polar low pressure belt (60^0 N & 60^0S)   (3)

Polar high pressure belt (90^0N & 90^0S)

Factors

- Earth rotation
- Variation of Sun ray's   (2)

The area where the sun rays are prependicular throughout

the year. The ail expands due to sun's heat and rises up on a

massive scale in this area. This is the reason for the low pressure

experienced throughout this zone   (3)

Sub Tropical high pressure belt

Located at 30^0 latitude in both the hemisphere. The warm air rising

from the equatorial low pressure belt. This air gradually cools and

drops to 30^0 latitudes due to the earth's rotation.

Sub Polar low pressure belt

Located at 60^0 latitudes in both hemispheres. As this zone is

close to the pole, the air colder here. The air in this zone

thrown away due to the rotation of the earth.

Polar high pressure belt

Located at 90^0 latitudes in both hemispheres. This zone

experiences severe cold throughout the year.
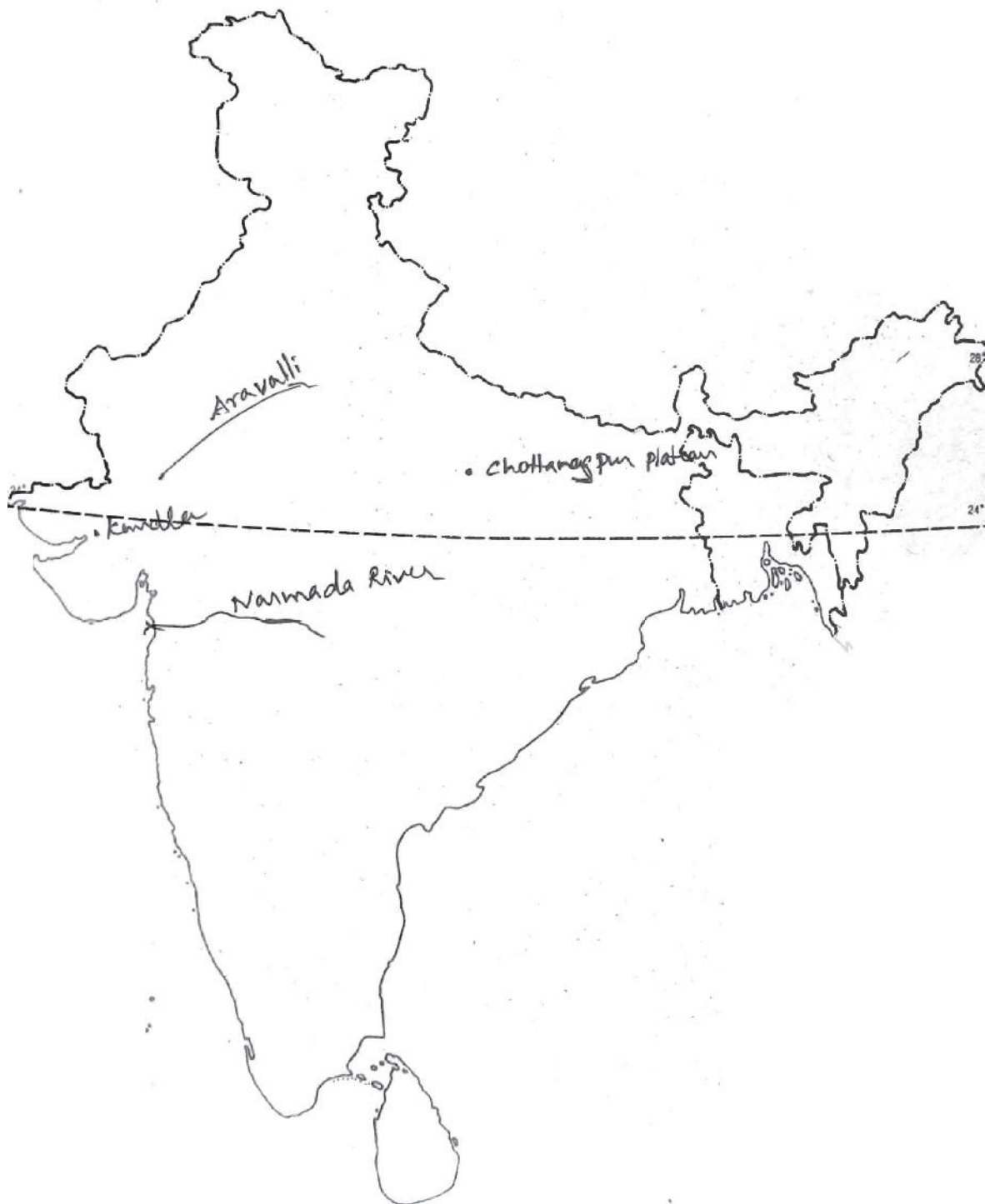
EQUIP - DIET KASARAGOD
SSLC Model Examination March 2022
SOCIAL SCIENCE

Time : 2½Hrs.   Maximum score : 80

Instructions:

* 15 minutes is given cool-off time
* Use Cool-off time to read the questions and plan your answers.
* Attempt the questions according to the instructions
* Keep in mind, the score and the time while answering the questions.
* The maximum score for questions from 1 to 35 will be 80.

PART I

A.   Answer any four questions 1 to 6. Each carries 1 score.   (4x1=4)

1.   The day in which the sun is vertically above the tropic of capricorn is called?

   (Winter solstice, Summer solstice, Equinox, Leap year)

2.   Which among the following countries was not a part of Triple entente?

   (England, France, Russia, Germany)

3.   In which pressure belt is 'Doldrums' situated?

   (Subtropical high pressure belt, Equatorial low pressure belt,

   Subpolar low pressure belt, Polar high pressure belt)

4.   Name the cropping season with sowing period in the beginning of June and harvesting period in early November.

   (Kharif, Rabi, Beverage crops, Fibre crops)

5.   Which Geographic Information System is used to understand the various features on earth's surface and its periodic changes?

   (Remote sensing, Overlay analysis, Buffer analysis, Network analysis)

6.   Name the social reform movement led by V.T Bhattathiripad.

   (Admavidhyasangham, Sadhu Jana Paripalana Sangham,

   Nair Service Society, Yogakshemasabha)

B.   Answer all the questions from 7 to 10. Each carries 1 score   (4x1=4)

7.   In which state is Koodamkulam nuclear power plant situated?

   (Maharashtra, Tamil Nadu, Karnataka, Gujarat)

8.   Which artificial satellite passes around the earth along the poles?

   (Geostationary satellite, Sun Synchronous satellite, GIS, GPS)

9. Which local wind blows through the North Indian plains?

       (Chinook, Loo, Harmattan, Foehn)

10. Co-operation, self help and mutual help are the principles of which bank?
       (Commercial Bank, Reserve Bank, Co-operative Banks, MUDRA Bank)

PART II

A. Answer any three questions from 11 to 15. Each carries 2 score   (3x2=6)

11. Write any two features of Siwalik mountain ranges.

12. What are the features of electronic banking?

13. What are the main sources of the government's income?

14. Briefly explain All India service.

15. Write a brief note on vaikom satyagraha.

B. Answer any two questions from 16 to 18. Each carries 2 score.   (2x2=4)

16. Write any two primary informations provided in the topographic maps.

17. Classify remote sensing based on the source of energy.

18. Who were the members of the Linguistic State Reorganisation Commission?

PART III

A. Answer any three questions from 19 to 23. Each carries 4 score.   (3x4=12)

19. Social survey is the most suitable study method for sociology. Give reasons to support this statement.

20. Differentiate between obligatory functions and discretionary functions of the state with examples.

21. Explain the role of education and healthcare in human resource development?

22. Mark the following in an outline map of India.

    a.   Malwa Plateau

    b.   Tuticorin

    c.   Western Ghats

    d.   Krishna river

23. From the given grid, Identify the settlements and Lake using 4 figure references.
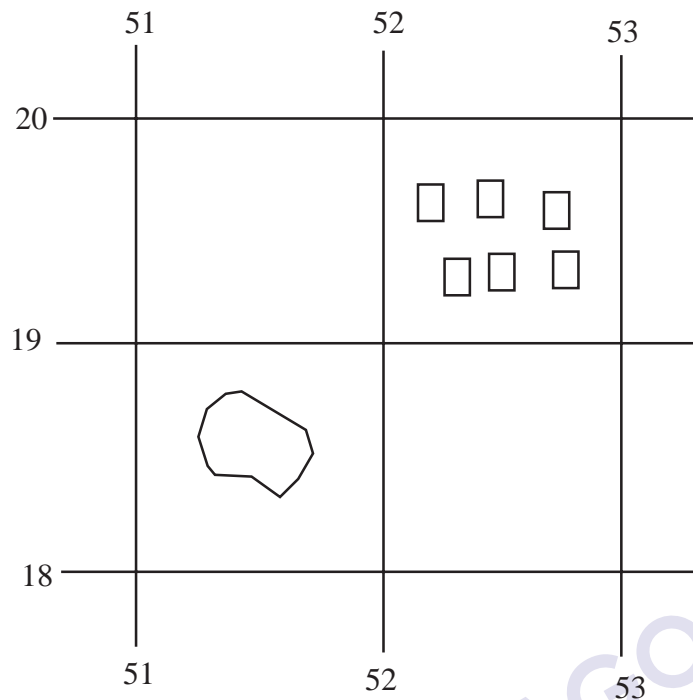
B. Answer any one of questions from 24 to 25. Each carries 4 score   (1x4=4)

24. What are the Limitations of aerial photography?

25. Match the following A and B.

A	B
a. Homi Jehangir Bhabha	a. Formation of Andhra Pradesh
b. H.N Kunzru	b. Constituent assembly
c. Potti Sriramulu	c. Indian atomic energy commission
d. Dr Rajendra Prasad	d. Linguistic reorganisation commission

PART - IV

A. Answer any three questions from 26 to 29. Each carries 6 marks.   (3x6=18)

26. Explain the role played by the following factors in fostering civic consciousness?

    a.   Family

    b.   Education

    c.   Democratic system

27. List out the administrative mechanisms and their functions for the protection of consumer rights.

28. What are the geographical requirements needed for the given agricultural food crops?

    a.   Rice

    b.   Wheat

    c.   Maze

29. Explain the different land revenue policies imposed by the British in India?

B.   Answer any two questions from 30 to 32. Each carries 6 score.   (6x2=12)

30. Explain the factors influencing the speed and direction of wind.

31. What were the proposals put forward by the social reformers to bring about fundamental changes in Indian society? What all social evils were abolished as a result of this? (any three)

32. What is imperialism? How did imperialism affect the colonies?

PART - V

A. Answer any two questions from 33 to 35. Each carries 8 score.   2x8=16)

33. Explain the national movements conducted under the leadership of Mahatma Gandhi.

    a.   Non-cooperation movement

    b.   Civil disobedience

34. Explain the following based on the Russian revolution.

    a.   February revolution

    b.   October revolution

    c.   Results of Russian Revolution

35. (i)   List out the features of Greenwich line, International date line and Indian standard time.

    (ii)   If the Greenwich time is 2 PM, What will be the time in India?

SOCIAL SCIENCE

Answer key

Set 3

Qn.no	Value point	Marks	Total
1.	winter solistice	1	
2.	Germany	1	
3.	equatorial low pressure belt	1	
4.	kharif	1	
5.	Overlay analysis	1	
6.	Yoghashema sabha	1	
7.	Tamil Nadu	1	
8.	Sunsynchronous satellite	1	
9.	Loo	1	
10.	Co-operative bank	1	10
11.	Situated to the south of Himachal. Average attitude is 1220 meters As the himalayan rivers cut across this range. It is continuously breaks at many places.	1	
	Broad flat valleys seen along these ranges are called Dunes (Dehradun).	1	2
12	Electronic Banking is a methos by which transactions can be carried out through net banking and tele banking - Any time Banking - Any where banking	1	
	- Net banking	1	2
13	Tax Revenue (Direct & Indirect Taxes)	1	
	Non Tax Revenue (fee, cess, fine , interest, pofit)	1	2

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Qn.no	Value point	Marks	Total
14	All India Services - Recruits at National Level - Appoints in central or state service eg : IAS, IPS	1 1	2
15	Vaikom Satyagraha - 1924 lead by T.K. Madhavan - This for claiming the right to travel - Expressing solidarity with the Satyagraha Mannath Padmanabhan organised the Savarna Jatha - The lower castes secured permission to travel through the roads, around the Vaikom Temple.	1 1	2
B . 16	Toposheet number Name of the place represented Latiudinal location Longitudal location Easting Northing (Any two)	1 1	2
17.	Active Remote sensing - artificial energy passive Remote sensing - Solar Energy	1 1	2
18	K.M. Panicker, Justice Fazal Ali,H.N. Khuzru	2	2
A 19	Social Survey - It helps to formulate a Comprehensive point of view of the topic based on the data collected from a goup of Selected people. Survey method is used when data is to be collected from a larger population. - Sample Survey - Questionnaires - The group under study is called respondents	 1 1	2 4

Qn.no	Value point	Marks	Total
20	Discretionary functions - which have to be implemented as per the economic condition of the state. Eg. Protection of health Obligatory functions - which have to be implemented by state at all times at any cost. Eg. Protection of boundary	2 2	4
21	Health : Productivity of the workers - Economic inequality increases - Natural resources is utilized effectively - Social welafre is ensured Education : Improve the skills of individuals - Better the technological know how - Helps to secure better job	2 2	4
22	See the map of India	1,1,1,1	4
23	Water bodies - 5118 Settlements - 5219		
24	- The shaking of aircraft affect the quality of images - The aircraft require open space for take off and landing - Frequent landing for refiling increase the cost		4
25	Homi J Bahba- Nuclear Energy Commission H.N. Khuzuru-State re-organisation committee Potti Sriramalu - Formation of Andrapradesh Dr. Rajendra Prasad - Constituent Assembly		4
26	Family - We learn to respect the elders - Inspiration and encouragement - Fostering and maintaining - Sense of responsibility Education : Education is to equip the individual to effectively utilise the knowledge gained through the learning of different sibjects for the betterment of society Through Education science and technology can be effectivelyutilised in a useful manner to the society value oriented education	2 2	

Qn.no	Value point	Marks	Total

	Democracy
	  - belives in the rule of law.
	  - It is a way of life
	  more than form of govt.
	  - All our activities should have a
	  democratic approach
	  living in co-operation
		2	6

27	Legal metrology department - Ensure the weight and measures Food safety department -Ensre the quality of food prodcuts Central drugs price control committee - controls price for medicine Food Safety and Standard authority of India - Ensure the quality of food products		6
28	Rice - Khari crops Soil - Alluvial Temperature : above 24^0 C Rainfall : 150 cm	2	
	Wheat : Rabi crops Soil : Well drained soil Temperature : 10^0 c to 26^0c Rainfall : 75 cm	2	
	Maize Raifall : 75 cm Soil: Well drained Summer and winter	2	6

Qn.no	Value point	Marks	Total
29	Permanent Land Revenue Settlement	2	
	Ryotwary system - Land Revenue was collected directly from the farmers - The ownership of land was vested with the farmers - excessive tax impoverised them - Tax was frequently increased	2	
	Mahalwari System - Implemented in North West India - The village headman was assigned the responsibility to collect tax - Tax was too excessive - Entire village was considered a single unit.	2	6
30	**Coriolis force :** Freeely movig bodies to get deflected to the right in the NH, and to the left in the SH. This is due to the force geneated as a result of Earth;s rotation	2	
	Pressure gradiant : The change in pressure with horizontal distance is termed as pressure gradiant. It is to be steeper when he pressure diffrence is more. The word speed will be higher there.	2	
	Friction : When obstructions cause friction in the wind. The speed of wind will be high over ocean surfaces and plans as the friction is less.	2	6

Qn.no	Value point	Marks	Total
31	- Eradicate caste system - protects the right of all - Eleminate descrimination against women - Provide education to all - Promote widow remarriage - abolish child marriage **Prohibited Social Evils** - Sathi System (Raja Ram Mohan Roy) - Remarriage Act - 1856 -	4 2	6
32	a) Poverty & unemployment increased b) Traditional economic system of colonies was destroyed c) Natural resources were exploited d) peoples in colonies wee forced to cultivate cash crops	1 1 1 1	4
33			
34	February Revolution Ignoring maximum protest from Duma, Nicolas II the Tsar decided to participate in the first world war. Food shortage became severe 1917. Thousands of women marched along the street of protograd on march 8, 1917 clamouring for bread. The workers orgnaise protested march in petragraded, Though the soldiers clashed with the demonstrators in the begining, later they joined the workers. The workers captured petrograde and Nicholar II was thrown out power. A Provisional government was reformed under Alexander Kerensky.	4	

QN.no	Value point	Marks	Total
	October Revolution A group of Sovient did not approve the provisional governtment. In october 1917 the bolshevikes organised an armed Rebellion against the provisional government. kerensky fled from the country and Russia the control of the Bolsheviks.	4	8
35	a. <u>Greenwich time :-</u> -- 0^0 Longittude is known as the Greenwich meridian -- Time is calculated world wide based on the Greenwich line -- line is known as primemeridian -- Local time at the primemeridian is known as the Greenwich mean Time	2	
	International date time -- 180^0 Longitude . -- There is a difference of 24 hours at 180^0 longitude to the east and west of Greenwich -- To avoid this difficulty the line is drawn with bend - It passess through the Bering stair in pacefic ocean.	2	6
	Standard time of India The longitudinal extent of India is from 68^0 to 97^0. The 82 $\frac{1}{2}$ ^{0} E longiude which passess almost through the middle has been fixed as the standard meridian of India b: 2 pm +5.30 7.30pm	2	
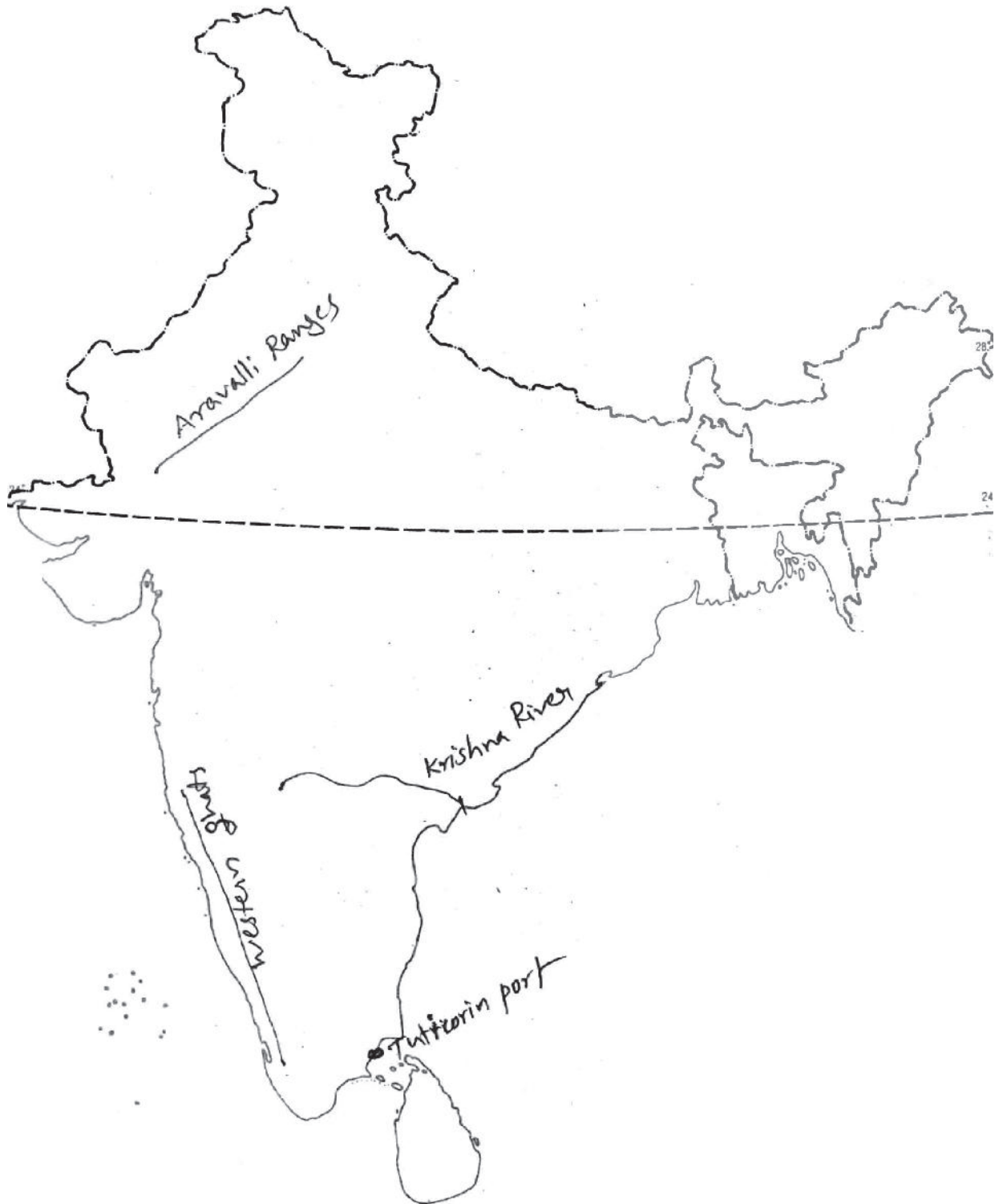
Aravalli Ranges

Krishna River

western ghat

Tuticorin port

BIOLOGY

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EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

BIOLOGY

Time : 1½ Hrs.   Maximum score : 40

Instructions :

* 15 minutes is given cool-off time.

* Read the instructions carefully and answer the questions.

* 'A' part questions are from Focus Area and 'B' part questions are from Non Focus Area. Write answers for prescribed questions from each part.

PART I

A. **Answer any 4 out of 6 questions** (4x1=4)

1. .... is a genetic disease.

   (AIDS, Sickle cell anaemia, Dengue, Hepatitis)

2. Find the odd one out.

   (Struggle for existence, Natural selection,

   Self acquired characters, Favourable vairations)

3. Name the vaccine against Tuberculosis.

   (OPV, MMR, BCG, TT)

4. Which RNA transfers the massage from DNA?

   (rRNA, mRNA, tRNA)

5. List out pheromones from the bracket?

   (Cortisol, Civeton, Gibberellin, Bombykol)

6. Fill in the blanks using the pair relationship?

   Genetic glue - Ligase

   Genetic Scissors - ....

B **Write answers for all the questions from 7 to 9.** (3x1=3)

7. Observe the picture and name the part which marked A?

A

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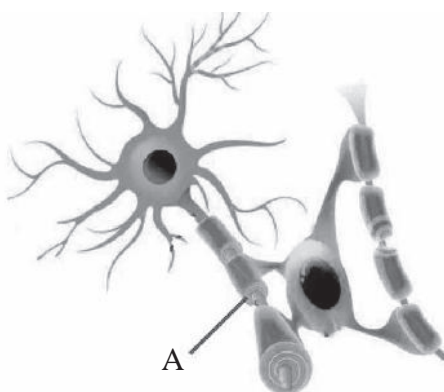
8. Name the most primitive member of human race?

   (Homo habilis, Ardipithecus ramidus,

   Astralopithecus afarensis, Homo erectus)

9. Choose the right statement?

   i) Radial muscles contract in dim light

   ii) Pupil contracts in dim light

   iii) Circular muscles contract in dim light

   iv) Pupil dilates in intense light

PART II

A. Answer the question given below (1x2=2)

10. Who invented DNA finger printing, now a days uses to find out the evidence in crime. What is the base of DNA finger printing?

B. Answer any one question among questions from 11 to 12. (1x2=2)

11. Fill up the column B, according to the column A.

A	B
Shark	Eye spot
Snake	Taste buds
House fly	Lateral line
Planaria	Jacobson's organ
	Ommatidia

12. The condition in which the pressure increases in aqueous chamber due to the reabsorption of aqueous humor is blocked, is called .... How can we cure this?

PART III

A   **Answer any three questions from question No. 13 to 16.**   **(3x3=9)**

13. Make a table to compare both the nucleic acids

       (Indicators - Name of Nucleic acid,

       Type of Sugar, Nitrogen bases)

14. Observe the picture and answer the questions given below.
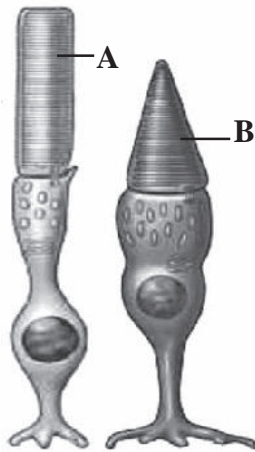
     a)   Sketch A and B.

     b)   Where can we see this in the eye?

     c)   What are the differences in functions of these?

15. AIDS is caused by HIV.

     a)   Which cells are affected by AIDS?

     b)   Write two conditions of HIV transmission?

16. Write the missed words in the table.

Disease	Cause	Symptoms
.......(a)........	Reduce production of Dopamine	.........(b)......
......(c).......	........(d)......	Frothy discharge from the mouth
Alzheimer's	.......(e)......	.......(f)......

B Write answers for the questions given below. **(1x3=3)**

17. Read the statement and answer the questions below.

"Exess blood is lost even through minor wounds"

a) Name the disease?

b) What is the cause of the disease?

c) Write one remedial measure?

PART IV

A. Answer any two from the questions 18 to 20. **(2x4=8)**

18. Observe the picture and answer the questions given below.
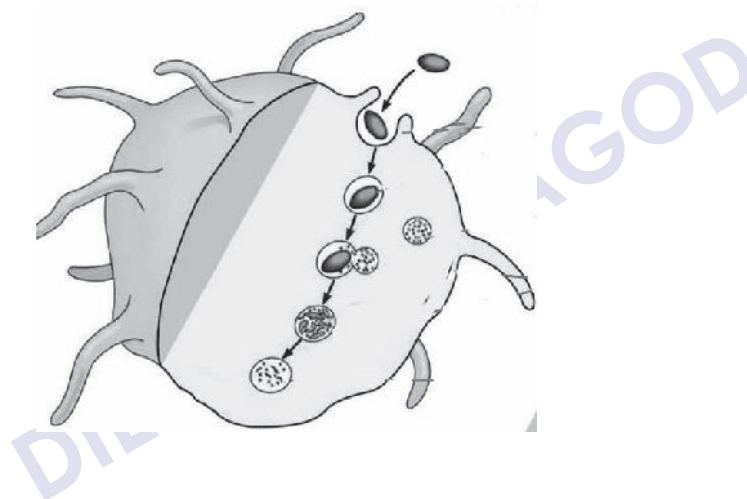
a) Which process does picture indicate?

b) Which are the two white blood cells included in this process?

c) Write the steps of this process?

19. Observe the given illustration and answer the questions.

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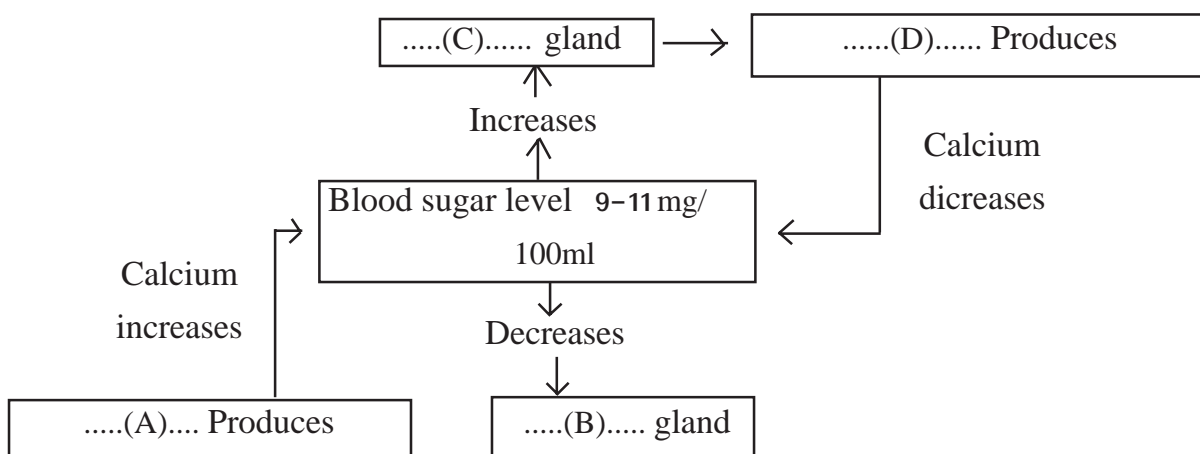
a)   Name the glands C and B?

b)   Name the hormones A and D?

c)   How do the hormones A and D control the level of Calcium in blood?

20. Read the statement and answer the questions.

"Excess cell division takes place in cancer"

a)   Causes of cancer?

b)   How do cancer cells spread to different parts of the body?

c)   What are the different treatments for cancer?

B.   Answer any one question from 21 to 22.   **(1x4=4)**

21. The hybridization experiment shows the inheritance of two pairs of contrasting traits of the same plant is given below.

Parental plants   dwarf plant, white flowered

(i)......   (ii).......

TTRR

TR   (iii) ......

Gametes

Tt Rr F_1 Generation

(iv)......
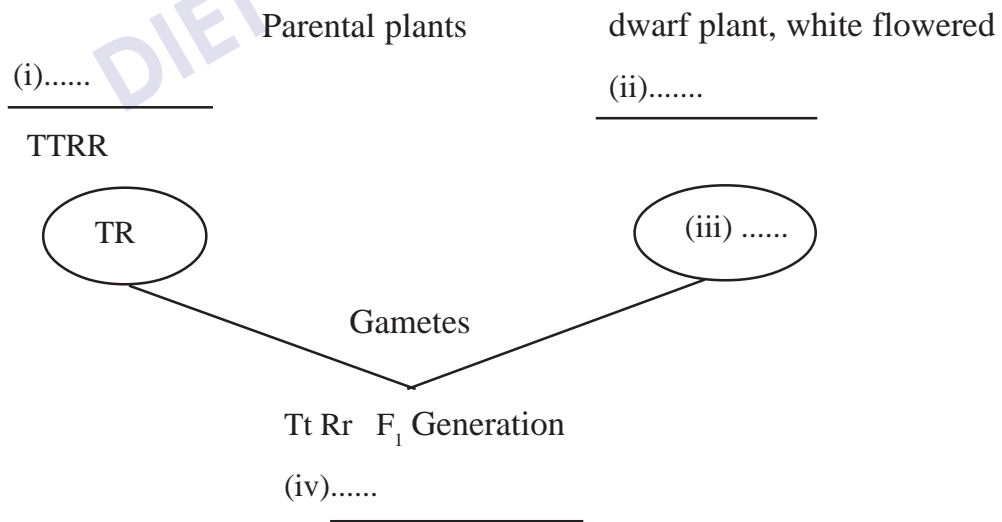
a)   Write the missed points?

b)   Write the alleles of tall white flowered plants and dwarf red flowered plants produced by the self pollination of F_1 generation.

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22. Read the statement and answer the questions.

"Blood clotting is a type of defence mechanism"

I. Make a flow chart using the hints given below.

    a)   Thromboplastin converts prothrombin into thrombin

    b)   Blood flows from the wound

    c)   Blood clot forms

    d)   Thrombin converts fibrinogen into fibrin fibres.

    e)   Tissues and platelets at the side of wound degenerate to form the enzyme called thromboplastin.

    f)   Fibrin fibres form a net and RBC and platelets get entangled in the net.

II   How does the coagulation become a defence mechanism?

PART V

A.   **Answer any one question from 23 to 24.**   **(1x5=5)**

23. Draw the picture and label the parts using the hints given below.
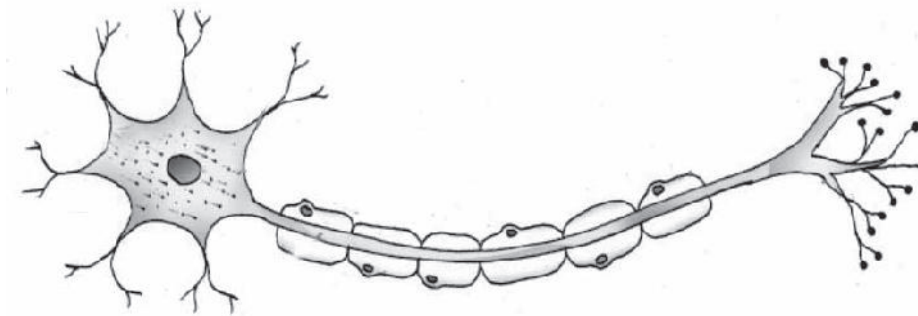
    a)   Branches of dendron

    b)   Carries the impulse from the cell body to the outside.

    c)   Secrets neurotransmitter

    d)   Encircles and protects the axon

24. Observe the illustration and answer the questions below.
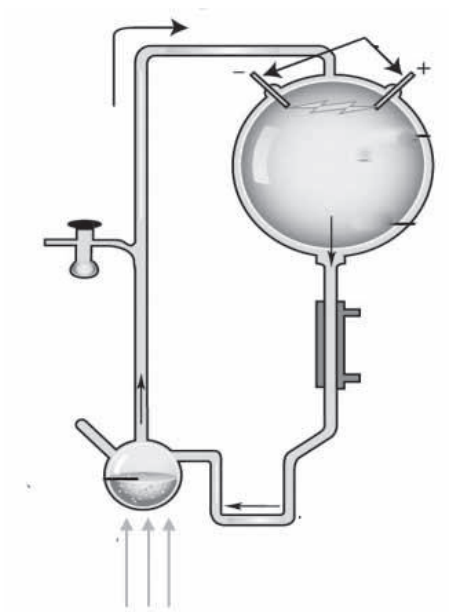
a)   Name the experiment   (1)

b)   What are the gases in the flask?   (2)

c)   What is the organic molecule formed in this experiment?   (1)

d)   Which hypothesis is related to this experiment?   (1)

BIOLOGY - ANSWER KEY - SET 2

Part I

A. 1. Sickle cell Anaemia (1)

2. Self Acquired Characters (1)

3. BCG (1)

4. mRNA (1)

5. Civeton, Bombykol (½+½ = 1)

6. Restriction Endonuclease (1)

B. 7. Myelin sheeth (1)

8. Ardipithecus ramidus (1)

9. Radial muscles contract in dim light (1)

Part II

A. 10. Alec Jeffreys

Each person has different arrangement of nucleotides (1+1=2)

B. 11. Shark - Lateral line

Snake - Jacobson's organ

Housefly - Ommatidia

Planaria - Eyespot (½x4 = 2)

12. Glaucoma, Laser surgery (1+1=2)

Part III

A. 13. DNA   RNA

Deoxy ribose   Ribose

Adenine, Thymine   A,U,G,C

Guanine, Cytosine

(½x6=3)

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14. a) A - Rod cell (½)

    B - Cone cell (½)

   b) In retina (1)

   c) Rod - helps to see in dim light (½)

      Cone - intense light / help to see different colours (½)

15. a) Lymphocyte (1)

   b) (Cause) (2) mark

16. a) Parkinsons

   b) any one symptom

   c) Epilepsy

   d) (Cause)

   e) Insoluble protein accumulates, neuron get destroyed.

   f) Memory loses   (½+½+½+½+½+½ = 3)

B. 17. a) Haemophilia (1)

   b) (Cause) (1)

   c) Remedy (1)

Part IV

A. 18. a) Phagocytosis (1)

   b) Neutrophil, Monocyte (½+½)

   c) Steps (2)

   19. a) C - Thyroid   B - Parathyroid   (½+½=1)

   b) A - Parathormone   D - Calcitonin   (½+½= 1)

   c) Explains (2)

   20. a) (Causes (1)

   b) Spreading (1)

   c) Treatment (2)

B.   21. a) i) Tall, Red flowered (½)

            ii) ttrr (½)

            iii) tr (½)

            iv) Tall, Red Flowered (½)

        b) Tall, White - TTrr, Ttrr,

            Dwarf, Red - ttRR, ttRr (½x4=2)

    22. I b)   Blood flows from the wound

        e)   Tissues and platelets at the side of wound degenerate to form the enzyme called thromboplastin.

        a)   Thromboplastin converts prothrombin into thrombin

        d)   Thrombin converts fibrinogen into fibrin fibres.

        f)   Fibrin fibres form a net and RBC and platelets get entangled in the net.

        c)   Blood clot forms   (½x6=3)

       II   Explanations (1)

Part V

A.   23. Drawing (1)
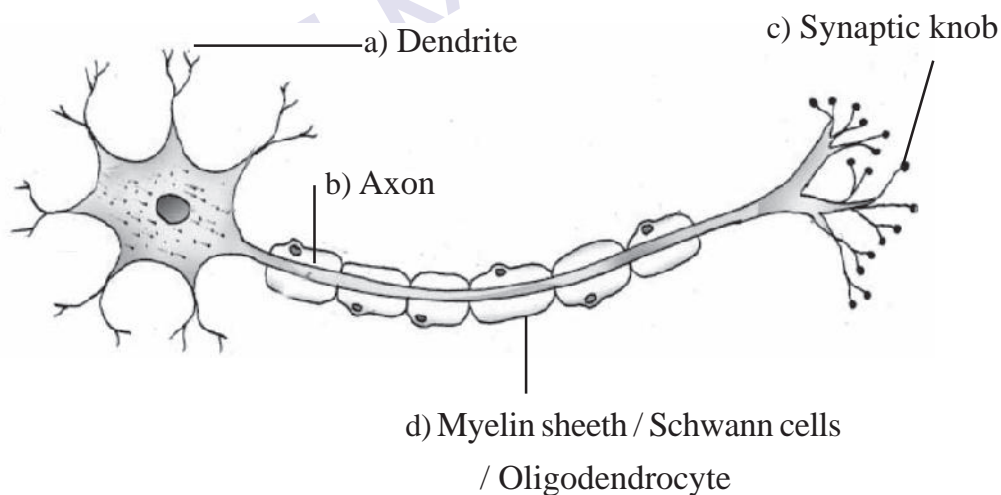
a) Dendrite
c) Synaptic knob
b) Axon
d) Myelin sheeth / Schwann cells / Oligodendrocyte   (5)

    24.   a) Urey - Miller experiment (1)

            b) Methane, Ammonia, Water vapour (any two) (2)

            c) Amino Acid (1)

            d) Chemical evolution theory (1)

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

BIOLOGY

Time : 1½ Hrs.   Maximum score : 40

Instructions :

*   15 minutes is given cool-off time

*   Read the instructions carefully and answer the questions.

*   'A' part questions are from Focus Area and 'B' part questions are from Non Focus Area. Write answers for prescribed questions from each part.

PART I

A.   Answer any four among questions 1 to 6. (1 score each)   (4x1=4)

1. Find the word pair relationship and fill in the blanks appropriately

    Diphtheria : Coryne bacterium diphtheriae

    Rat fever   : ....

2. Identify the odd one and write the common feature of others?

    - Diabetes mellitus
    - Fatty liver
    - Sickle cell anaemia

    Hyper tension

3. Fill in the blanks suitably

    The enzyme .... is used to cut the genes. The enzyme is known as genetic scissors

4. Which parts of the brain maintain balance of the body

    - cerebrum
    - cerebellum
    - medulla oblongata
    - thalamus

5. Which is not a bacterial disease?

    - Blight disease
    - inflammation of udder
    - foot and mouth disease
    - Tuberculosis

6. Rewrite the following sentences by correcting the false sentence?

    Sickle cell anaemia is caused by the uncontrolled divisions of cells?

B **Answer all questions 7 to 9 . (1 score each)** **(3x1=3)**

7. Find the word pair relationship and fill in the blanks appropriately

   Hunger : ....

   Touch : External stimuli

8. Identify the odd one and write the common feature of others?

   - Ethylene
   - Cytokinin
   - Auxin
   - Pheromones

9. Who proposed mutation theory?

PART II

A. **Answer the question No. 10 (score 2)** **(1x2=2)**

10 **Justify the statement given below:**

   a) Smell can be detected only in the presence of mucus.

   b) Persons with colour blindness cannot distinguish between green and red colours.

B. **Answer any one questions from 11 to 12. (2 score each)**

(1x2=2)

11.

DNA testing - Dead bodies dentified

Kollam : About twenty dead bodies of those who lost their lives in the Paravoor firework tragedy were identified through DNA test and handed over to relatives.

Didn't you read the news report?

   a) What is the basis of DNA test?

   b) How is it possible to identify relations through DNA test?

12. The forelimbs of the organisms shown in the picture below, do not show any similarity. Hence they do not have any evolutionary relationship

How will you respond on this statement? Substantiate.

PART III

A   Write any three questions from 13 to 16. (3 score each)   (3x3=9)

13. It is because of its taste that we like food. Given below are the different stages of experiencing taste. Analyse and arrange them in the correct order.

    a)   Experience of taste

    b)   Cause impulses

    c)   Food particles dissolve in saliva

    d)   Reaches taste buds

    e)   Impulses reach the brain

    f)   Chemoreceptors get stimulated

14. Chemical substance that are secreted by certain animals to surroundings to facilitate communication.

    a)   Name the chemicals

    b)   Write two functions

    c)   Write two examples

15. The stages in the process of protein synthesis are given below. Prepare a flow chart using the stages.

    a)   tRNA carries different kinds of aminoacids to the ribosome

    b)   mRNA reaches outside the nucleus

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c) mRNA forms from DNA

d) Amino acids are added based on the information in mRNA

e) mRNA reaches ribosome

f) Proteins are synthesized

16.
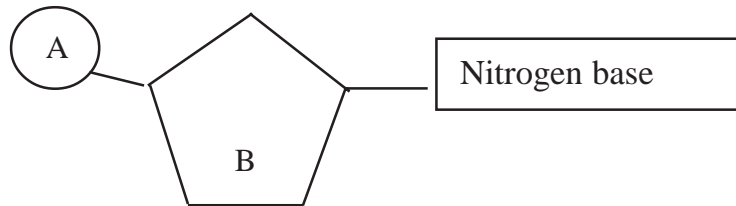
a) Identify the figure?

b) Write A and B?

c) Which nitrogen base found only in RNA?

B   Answer the question (3 score)   **(1x3=3)**

17. Analyse the table given below. Rearrange B and C according to the indicators in column A.

A	B	C
1) Situated above the Kidney	a) Hypothalamus	i) Calcitonin
2) Situated just below the larynx	b) Adrenal gland	ii) Oxytocin
3) Situated in the brain	c) Thyroid	iii) Epinephrine

A. **Write any two questions 18 to 20 (4 scores)**   **(2x4=8)**

18.
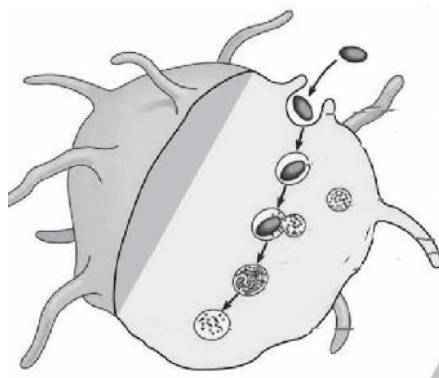
    a)   Which is the process indicated in the illustration?

    b)   Which are the white blood cells involved in the process?

    c)   Is it specific defense mechanism? Justify

19. What is antibiotics? Write side effects of antibiotics?

20. a)   Name the AIDS virus?

    b)   Write the Mode of transmission of AIDS?

B. **Write only one question from 21 to 22. Each question carries 4 score (1x4=4)**

21. Analyse the illustration of impuse transmission through axon and answer the following questions?
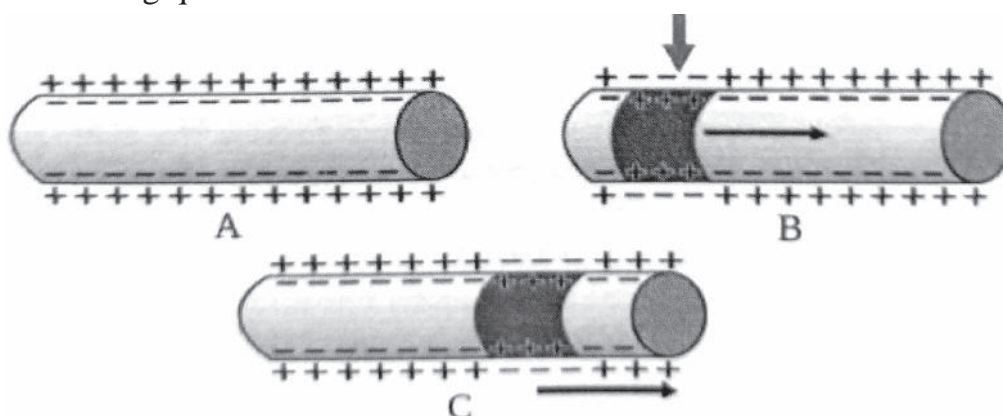
    a)   What are the changes that take place in illustration B when compared to A? Give reason for this change.

    b)   Explain how this change brings about the transmission of impulses through axon?

22. Hints about two diseases are given below. Analyse them and answer the questions.

A	Internal bleeding, Severe fever, Headache, Muscle pain, redness in eye
B	Genetic disease Excess blood is lost even through minor wounds.

a) Identify the disease A and B?

b) How temporary relief brings in disease A?

c) Which bacteria causes disease B?

d) How to spread the disease A to human being?

PART V

A. Answer the following question (5 marks) (1x5=5)

23. Examine the graph indicating the blood glucose level of different Individuals before breakfast.
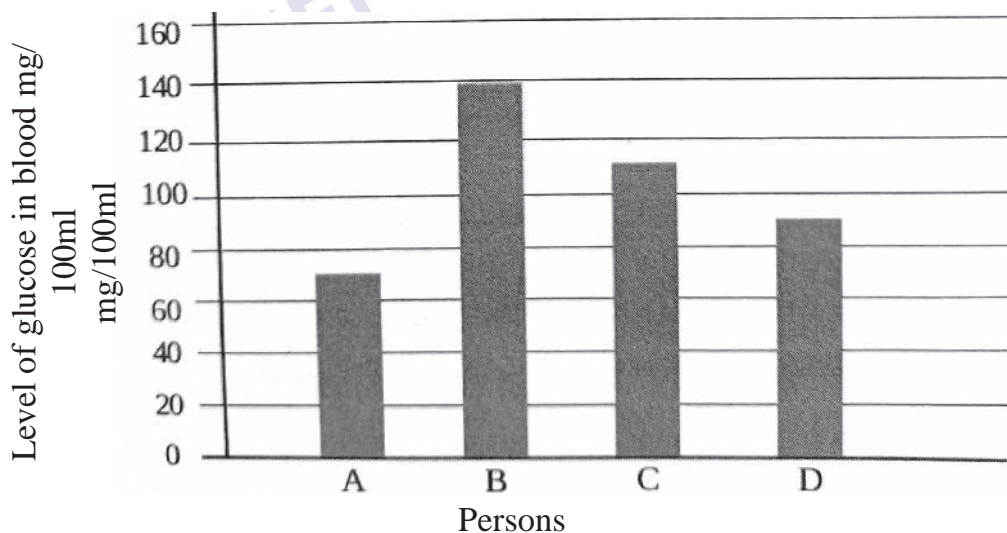
a) Which individual is affected by diabetes mellitus?

b) Write two actions of insulin to prevent the rise in the level of glucose in blood.

c) Why do people having diabetes mellitus experience extreme fatigue?

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24. Picture of ear is given below. Draw the picture and mark the parts by analysing the indicators.
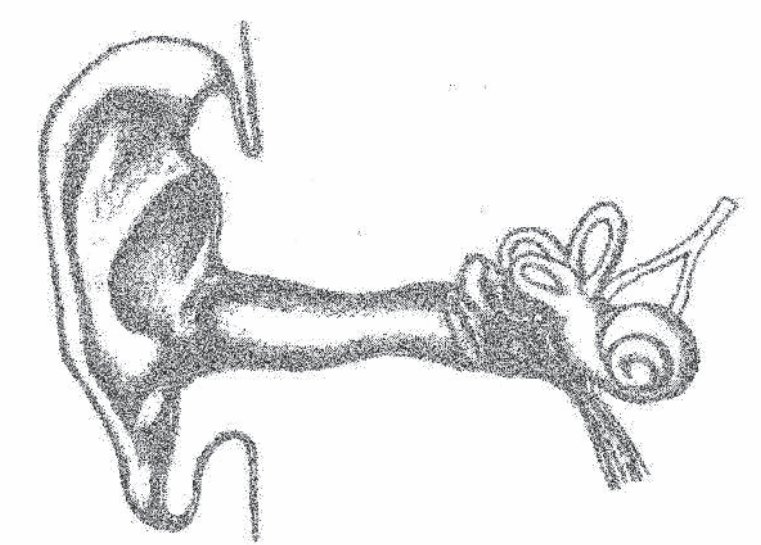
a)   Which part receives the vibration from ear drum?

b)   Which canal connects middle ear and pharynx

c)   Where is found sound receptors?

d)   Through which part sound waves reach to ear drum.

BIOLOGY - ANSWER KEY - SET 3

Part I

1 Leptospira (1)

2. Sickle cell anaemia, others are life style diseases (1)

3. Restriction endo nuclease (1)

4. Cerebellum (1)

5. Foot and mouth disease (1)

6. Cancer is caused by the uncontrolled divisions

   of cells. (1)

7. Internal stimuts (1)

8. Pheromones. Ohers - plant hormones (½+½=1)

9. Hugo devries (1)

10. a) Aromatic particles dissolve in the mucus and stimulate olfactory receptors.

    b) They have no cone cells to detect that colours due to genetic disorder.

                                                                   (2 score)

11. a) The arrangement of nucleotides in the DNA differs in various individuals.

    b) The arrangement of nucleotides among close relatives have many similarities. (2 score)

12.   This statement is not correct

       In These organisms external structure of fore limb is different but internal structure is same. (3 score)

13.   (c);   (d);   (f);   (b);   (e);   (a)   (3 mark)

14.   a)   Pheromones

       b)   * Attracting mates

             * Informing availability of food.

             * determining the path of travel

             * Informing the dangers.

15.   c, d, e, a, d, f   (½x6=3 score)

16.   Nucleotides   (1)

    Phosphate, sugar molecules (1)

    uracil (1)

17.   1. (b) - (iii)

    2. (c) - (i)

    3.(a) - (ii)   (3 score)

18.   a)   i) Phagocytes reach near the pathogens.

            ii) Engulfs pathogen in the membrane sac

            iii) Lysosome comes near the sac

            iv) The enzyme in the lysosome

                destroys the pathogens. (4 score)

19.   Definition of Antibiotics (1)

    * Regular use develops immunity in pathogens against antibiotics (1)

    * Destroys useful bacteria in the body. (1)

    * Reduces the quantity of some vitamins in the body. (1)

20. HIV

    Through sexual contact with HIV infected person

    From HIV infected mother to the foetus

    By sharing needle and syringe contaminated with HIV components

    Through the reception of blood and organs contaminated with HIV. (4 score)

21. a) When stimulated, ionic equilibrium in the particular part changes, and the outer surface of the plasma membrane of axon becomes negatively charged while the inner becomes positive.

    b) *   These changes generate impulses

        *   The momentary charge difference in the axon stimulates its adjacent parts.

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* Similar changes occur there also

* Impulses get transmitted through axon (4 score)

22.   A - rat fever   B - haemophilia

By injecting the defficient protein.

leptospira

any relevant points   (4 score)

23.   a) (B)

b) *   Enhance the entry of glucose into the cell

*   Converts glucose to glycogen in liver and muscles.

c) *   Sufficient quantity of glucose is not reaching the cell.

Energy production decreases. Excess amount of glucose is

eliminated through urine.   (5 score)

24.   Draw the picture

Maleus

Eustachian tube

Cochlea

Auditary canal   (5 score)

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

BIOLOGY

Time : 1½ Hrs.   Maximum score : 40

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*   Read the instructions carefully and answer the questions.

*   'A' part questions are from Focus Area and 'B' part questions are from Non Focus Area. Write answers for prescribed questions from each part.

PART I

A.   Answer any four questions 1to 6. Each question carries 1 score   (4x1=4)

1. Which of the following is not made up of neurons?

    (Thalamus, Cerebrum, Pancreas, Hypothalamus)

2. Identify the odd one and write the common feature of others?

    (Sclera, Choroid, Retina, Yellow spot)

3. Identify the word pair relation and fill in suitably.

    Musk deer : Muscone

    Civel cat - ....

4. The Oxygen carrying capacity of red blood cells decreases. The sickle shaped RBC get collected in the blood vessels and block the blood flow. The symptom says about which disease?

5. Write down the false statements related to the T - lymphocytes?

    *   Neutralise the toxins of the antigens

    *   Stimulate other defense cells of the body

    *   Destroy the cells affected by virus

    *   Destroy cancer cells

6. How many strands are present in the DNA?

B   **Write all questions from 7 to 9. Each question has one score   (3x1=3)**

7. Write the change in pupil in bright light?

| Change in pupil in dim light | Change in Pupil in bright light |

Radial muscles contrast

A
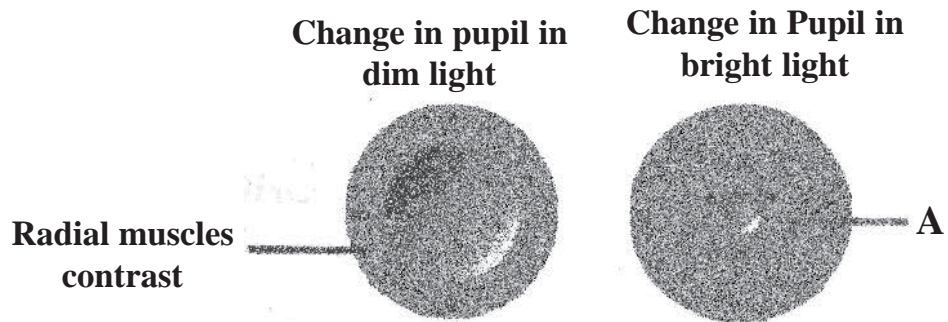
8. Observe the illustration of Receptors in the skin and write A and B?

A

Cold receptor

Touch receptor

B

Temperature receptor
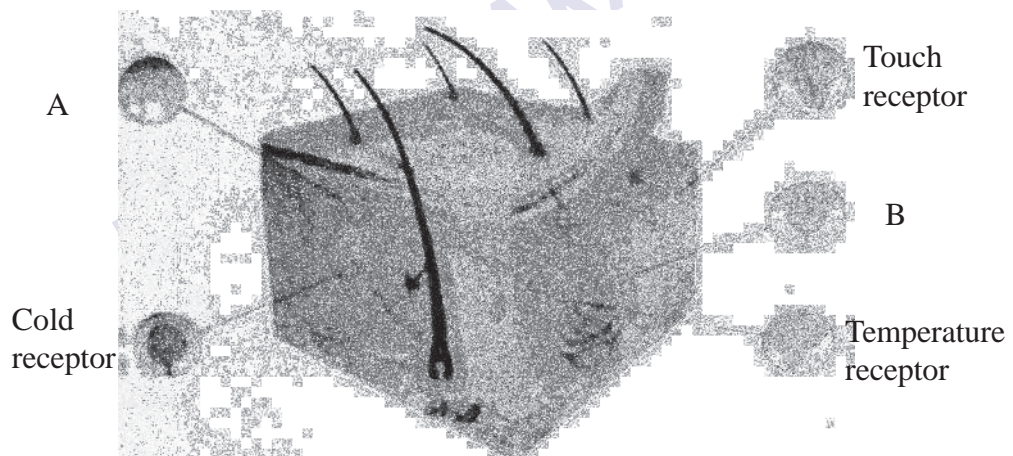
9. Which micro-organism cause the diseases shown in the picture?
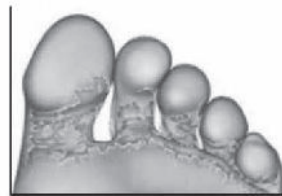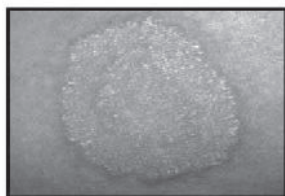
PART II

A. **Answer the question No. 10 (2 score)** (1x2=2)

10. Observe the illustration and fill in A, B, C, D
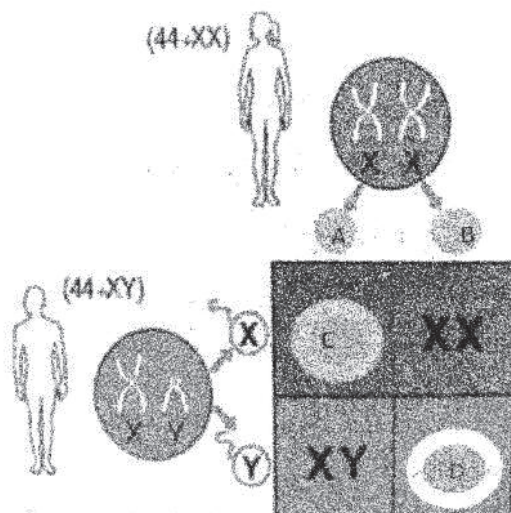
B. **Answer any one question from 11 to 12. Each question carries 2 score.**

((1x2=2)

11. a) What is mutation?

   b) What are the reasons for mutation?

12. a) This logo indicates which project?

   b) What is the relevance of Human genome project?

PART III

A **Write any three questions 13 to 16. Each question carries 3 score.**

(3x3=9)

13. a)   What is DNA profiling?

b) What is the basis of DNA testing?

c) What are the uses of DNA testing?

14.
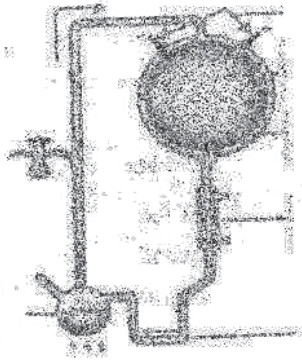
a) Write the name of this experiment?

b) Which are the gases used in this experiment?

c) Which material is get sedimented?

15. Observe the illustration and with the help of given hints fill in A, B, C, D, E and F.
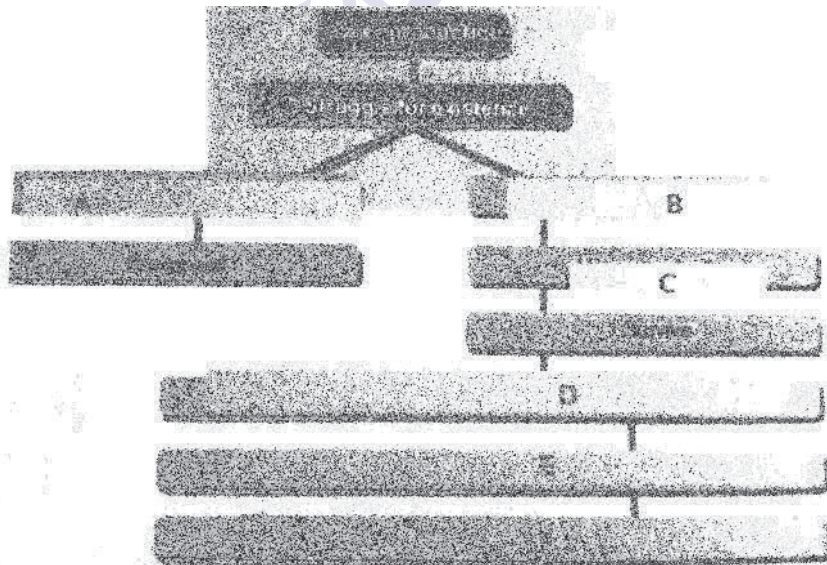
* Natural selection

* Favourable variations are transferred to the next generations

* Origin of new species

* Accumulation of variation inherited through generations

* Those with favourable variations

* Those with no favourable variations

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16. Fill in the blanks with suitable words.

	Number of Strands	Type of Sugar	Nitrogen bases
DNA			
RNA			

B **Answer the questions (3 score)** **(1x3=3)**

17. Complete the column B and C in accordance with column A?

A	B	C
Planaria	Jacobson's organ	Body balance
Housefly	Lateral line	Light
Shark	Eye spot	Olfactory receptors
Snake	Ommatidia	Photoreceptors

PART IV

A. **Write any two questions from 18 to 20. (4 scores)** **(2x4=8)**

18. i) Genes are working by synthesising ....

ii) Prepare a flow chart of protein synthesis using the given tips?

a) tRNA brings different kinds of amino acids to ribosome

b) mRNA reaches out of the nucleus

c) mRNA forms from DNA

d) Based on the information in mRNA amino acids are added

e) mRNA reaches in ribosome

f) Protein molecules are synthesised

19. Complete the illustration given below by including different defence mechanism in plants?
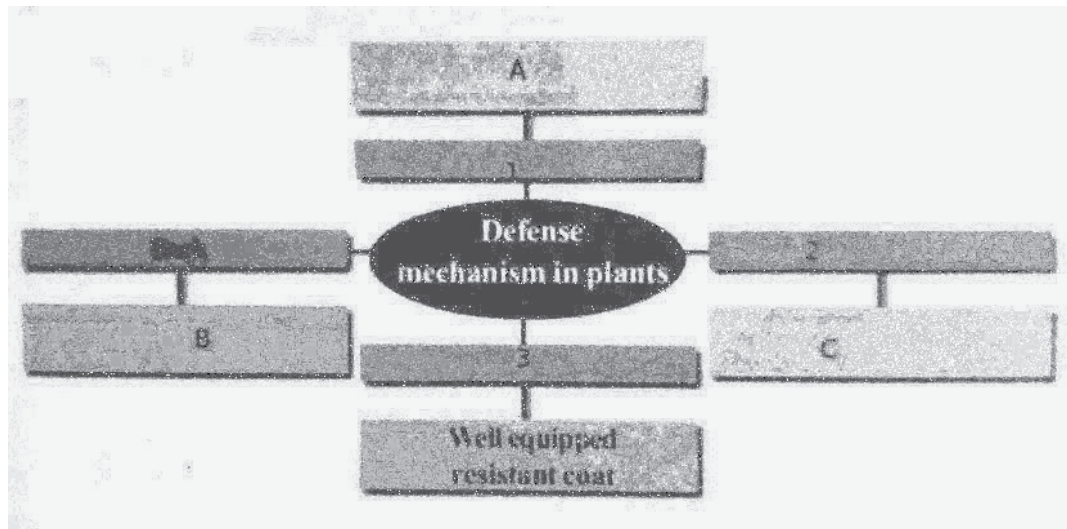
20. Observe the table of blood groups and write the answers?

Blood group	Antigens	Antibodies
A	A	b
B	B	a
AB	A and B	Nil
O	Nil	a and b

a) Where the antigens are found?

b) What are the antigens in the blood group AB?

c) Where the antibody is found?

d) What are the antibodies in the blood group O?

e) What is Rh factor?

f) Which blood group have antigens A, B and D?

B. Write only one question from 21 to 22. Each question carries 4 score (1x4=4)

21. Observe the illustration and write the answers?
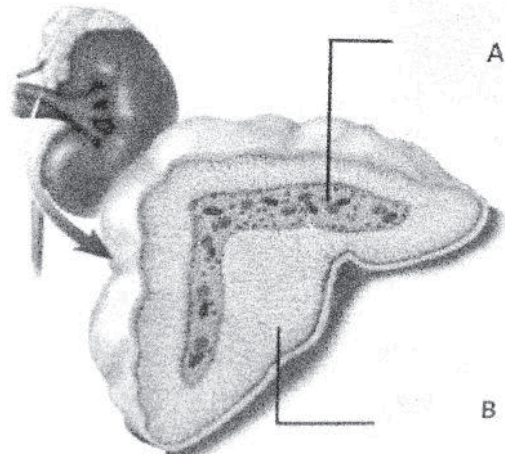
a) Name the endocrine gland?

b) Identify the parts labelled as A and B?

c) Name the hormones synthesised by A?

d) Which hormone maintains blood pressure?

22. Complete the table and fill in A, B, C, D and E

PART V

A. Write any one question from 23 and 24. Each question carries 5 score (1x5=5)

23. Draw the picture and label the parts A, B, C and D?

    a) Cerebrum

    b) Thalamus

    c) Hypothalamus

    d) Medulla oblongata

    e) Write the functions of A, B, C and D

24. Write the answers related to tuberculosis

    a) Disease causing bacteria

    b) Symptoms

    c) Transmission of disease

    d) Treatment

    e) Vaccine

BIOLOGY - ANSWER KEY - SET 4

1. Pancreas (1)

2. Yellow spot (1)

3. Civeton (1)

4. Sickle cell anaemia (1)

5. Neutralise the toxins of the antigens (1)

6. 2 (1)

7. Circular muscles contract (1)

8. A - Pain receptor (½)

   B - Pressure receptor (½)

9. Fungus (1)

10. a) X (½)

    b) X (½)

    c) XX (½)

    d) XY (½)

11. Sudden change in genetic constitution of an organisms (1)
    Defects in the duplication of DNA
    Radiations
    Chemicals
    (any two (½+½)

12. Human genome project
    Human genome has about 24000 functional genes
    Major share of human DNA includes junk genes
    There is only 0.2 percent difference in DNA among humans
    About 200 genes in human genome are identical to those in bacteria   (2)

13. The technology of the testing the arrangements of
    nucleotides is DNA profiling.   (1)
    Just like the difference the finger print of each person,   (1)
    the arrangement of nucleotides in each person also differs.
    To identify real parents, to find out hereditary characteristics,
    to identify the real culprit   (1)

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14. Urey-miller experiment (1)

Methane, ammonia, water vapour (1)

Amino acids (1)

15.

(½x6=3)
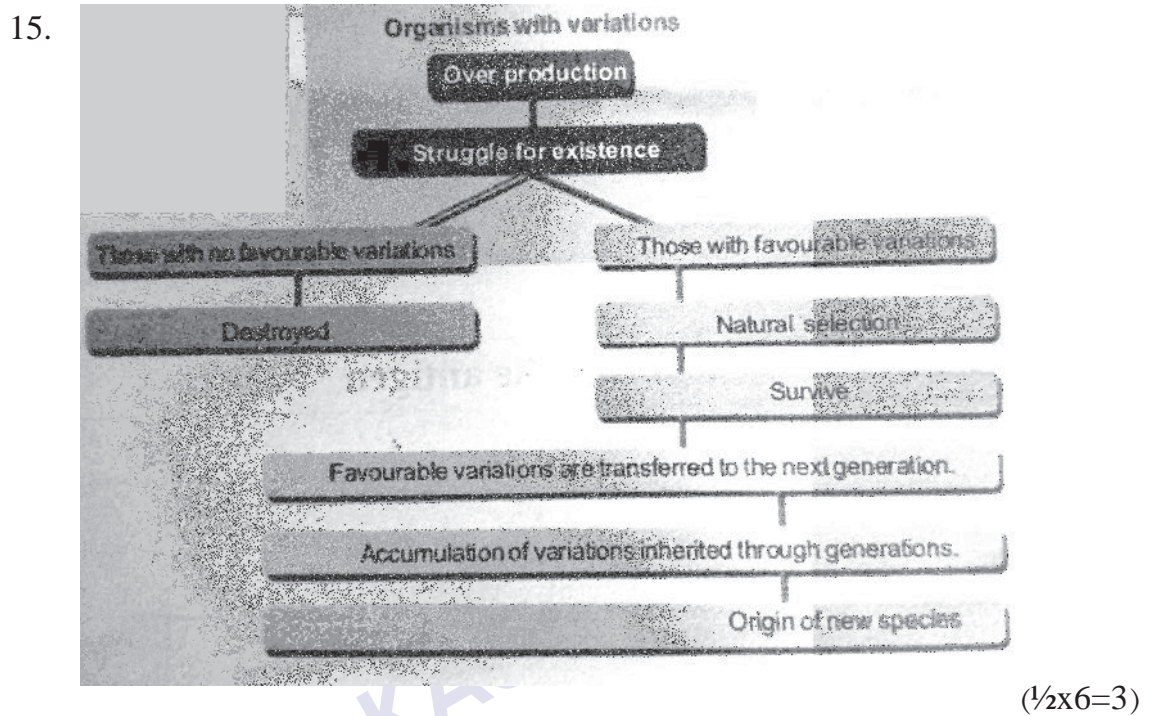
16.

	No.of. Strands	Type of Sugar	Nitrogen bases
DNA	2	De-oxy Ribose	Adenine, Thymine Cytosine, Guanine
RNA	1	Ribose	Adenine, Uracil Cytosine, Guanine

(½x6=3)

17.	A	B	C
	Planaria	Eye spot	Light
	House fly	Ommatidia	Eye
	Shark	Lateral Line	Balancing
	Snake	Jacobson's organ	Olfactory receptor

(3)

190
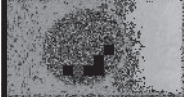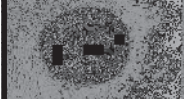
18. i) Protein (1)

ii) c $\longrightarrow$ b $\longrightarrow$ e $\longrightarrow$ a $\longrightarrow$ d $\longrightarrow$ f   (½x6=3)

19. Bark, Leaf Cuticle, Cell wall,
Callose such four defence mechanism and
their functions (½x8=4)

20.   a) RBC (1)

b) A, B (½x½ = 1)

c) Blood plasma (1)

d) a, b (½+½=1)

e) Antigen D (1)

f) AB Positive (1)

21.   a) Adrenal Gland (1)

b) A - Medulla   B - Cortex (½+½=1)

c) Epinephrine, norepinephrine (½+½=1)

d) Aldosterone (1)

22.

White Blood Cells		Defense Action
	Neutrophil	Engulfs bacteria, synthesizes chemicals that destroy bacteria.
	Basophil	Stimulates other white blood cells. Dilates the blood vessels.
	Eosinophil	Synthesizes chemicals that destroy foreign bodies. Synthesizes chemicals required for the inflammatory responses.
	Monocyte	Engulfs and destroys germs.
	Lymphocyte	Identifies and destroys germs specifically.

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23.   Draw the picture (1)

       Label the parts (½x4=2)

       Write the functions (½x4=2)

24.   *Pathogen :* Mycobacterium tuberculosis (1)

       Major symptoms : Loss of body weight, fatigue, persistent cough (½+½=1)

       Transmission of Disease : When the patient speaks, cough or sneezes, the pathogens spread into the air and thereby to others. (1)

       Treatment : By administering antibiotics. (1)

       Vaccine : BCG (1)

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

BIOLOGY

Time : 1½ Hrs.　　　　　　　　　　　　　　　　Maximum score : 40

Instructions :

* 15 minutes is given cool-off time.

* Read the instructions carefully and answer the questions.

* 'A' part questions are from Focus Area and 'B' part questions are from Non Focus Area. Write answers for prescribed questions from each part.

PART I

A.　1 Answer any four questions from 1 to 6. Each question carries 1 score

(4x1=4)

1. Identify the word pair relation and fill in suitably?

    Thyroid : Calcitonin

    Parathyroid : ....

2. Choose the right statement from those given below

    * The disability in cone cells causes glaucoma

    * Night blindness is the deficiency disease of vitamin A

    * Clear Image is formed in blind spot

    * Vitreous fluid provides nourishment to the tissues of eye

3. Choose the right word pair

    * Dopamine : Neuro transmitter

    * Brain : 32 pair nerves

    * Thalamus : Voluntary movement

    * Epilepsy : To lose memory

4. Which membrane protect the brain?

    * Myelin sheath

    * Meninges

    * Cerebrospinal fluid

    * Synapse

5. Rewrite the following sentences by correcting the underlined word if it is wrong?

   * A protein called keratin present in <u>epidermis</u> prevents the entry of germs

   * <u>wax</u> <u>covering</u> prevents the germs which crosses the cell wall.

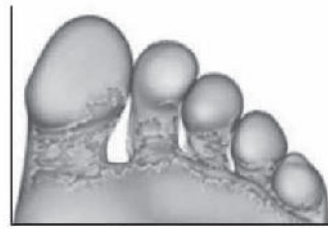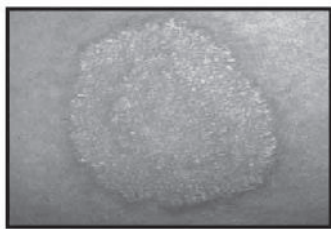6. Identify the odd one and write the common feature of the others?

   * Auxin

   * Ehylene

   * Cytokinin

   * Insulin

B   Answer all questions from 7 to 9. Each question carries 1 score   (3x1=3)

7. Write sympathetic activity

   * Increases the heart beats

   * Trachea contracts

   * The pupil in the eye contracts

   * Production of saliva increases

8. Which micro-organisms cause the following diseases.
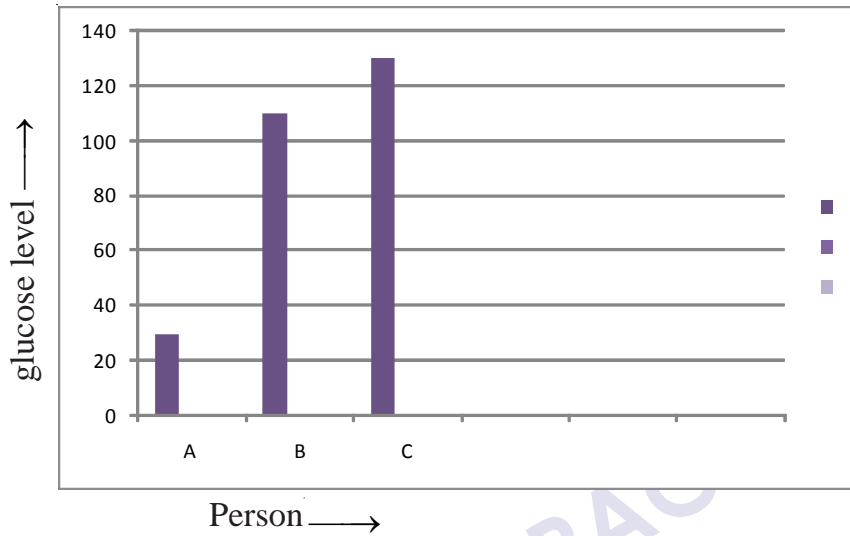

   9.   Which is not a bacterial disease?

         * Leptospirosis

         * Tuberculosis

         * Nipah

         * Diphtheria

A.   Answer the questions. Each question carries 2 score   (1x2=2)

10. Observe the graph that shows the level of glucose in the blood of various individuals before breakfast.

a)   Who has normal level of glucose in blood?

b)   What are the hormones regulate glucose level in blood?

**B.   Answer any one question from 11 to 12.**

(1x2=2)

11. Arrange Column B of the table to match Column A.

	A	B
1)	Ardipithecus ramidus	Had the ability to stand erect
2)	Homo habilis	Modern man
3)	Homo erectus	Made weapons from stones and bone pieces
4)	Homo sapiens	The most primitive member of the human race

12. Observe the illustration and write the name of white blood cells and their functions?
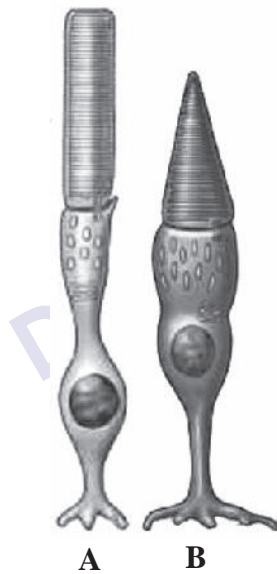

A	**B**
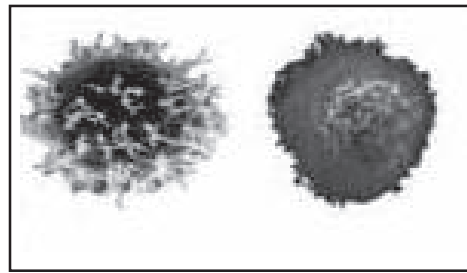
PART III

A   **Answer any three questions from 13 to 16. Each question carries 3 score**

(3x3=9)

13.

    A   **B**

    a)   In which part of the eye do these cells see?

    b)   Difference between A and B?

    c)   What is the cause of diversity in cone cells?

14. Which chemical help ants moving in a line along a particular trail?

    a)   Two other functions of these chemical?

    b)   Write two examples of these chemical?

15. Observe the following statements and write the correct ones.

   a) AIDS spread through insects like mosquitoes, houseflies etc.

   b) From HIV infected mother to foetus

   c) AIDS spreads through cough, sneezing etc

   d) Through the reception of blood and organs contaminated with HIV

   e) By staying together and sharing food

   f) Through sexual contact with HIV infected person

16. Do not use antibiotics without the recommendation of a Doctor. Why?

B   Answer the question (3 score)   (1x3=3)

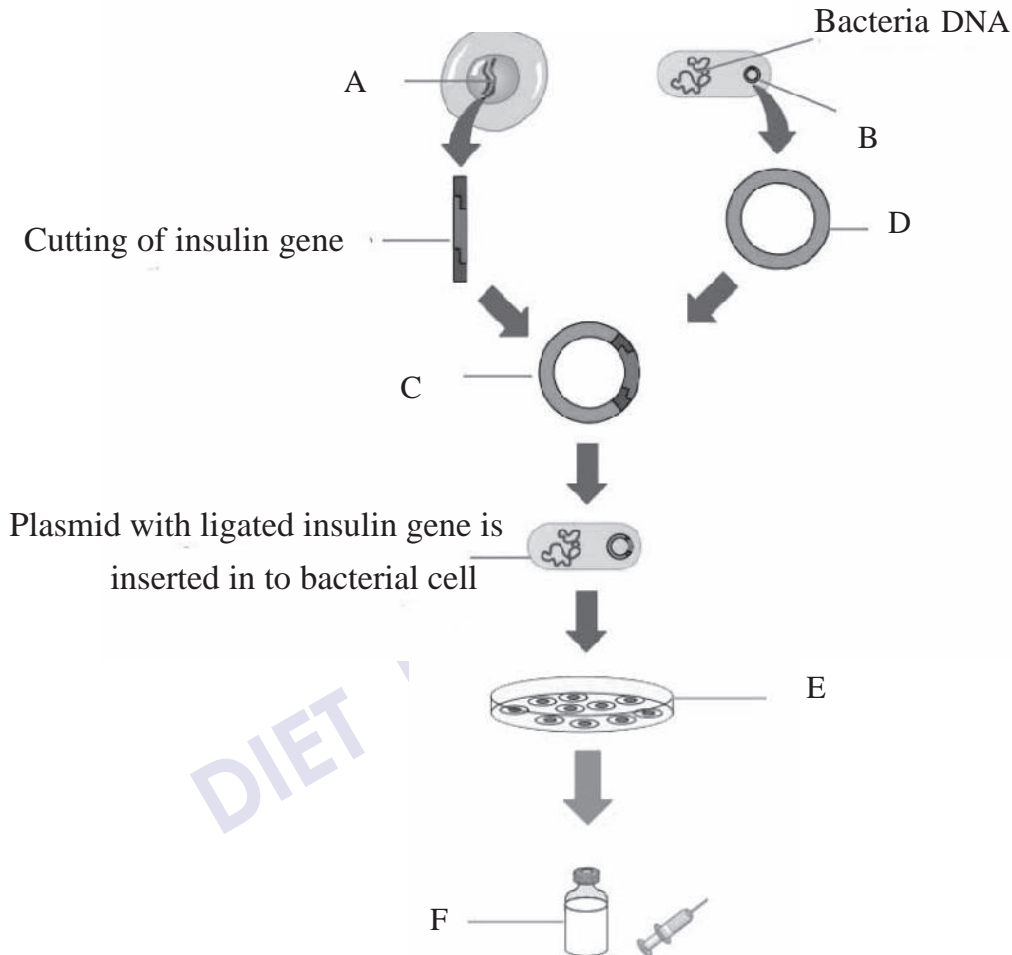17. Observe the picture and answer the following questions
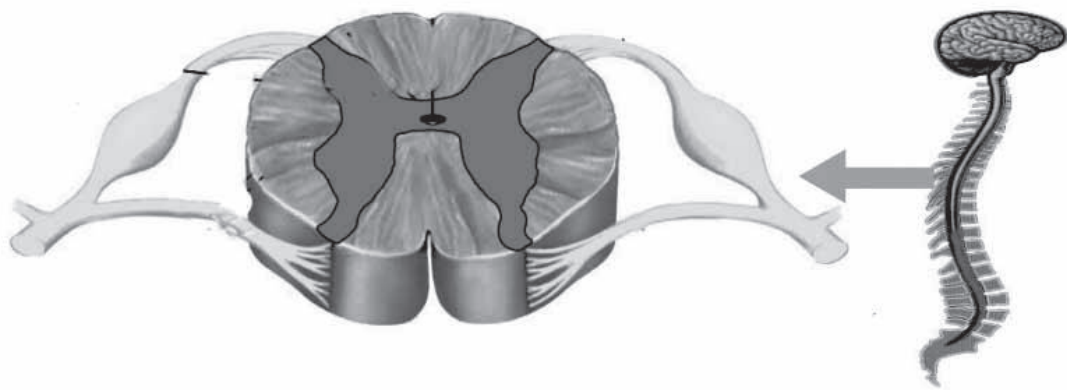
   a) Identify the picture?

   b) Which nerve passes through dorsal route?

   c) Fluid in the central canal?

A. **Answer any two questions from 18 to 20. Each carries 4 score.** **(2x4=8)**
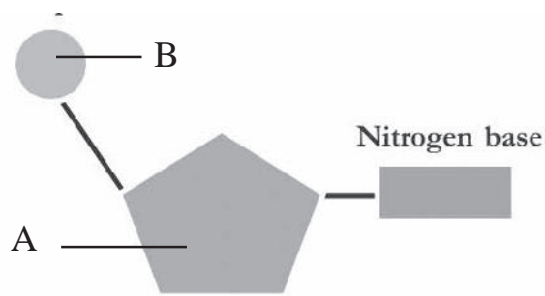
18. Complete the flow chart.

a) Write A, B, C, D, E and F.

b) Name the enzymes used to cut and join the genes.

19.a) Who put forward a logical scientific theory on evolution?

b) Which peculiarity of the finches attracted Drawin?

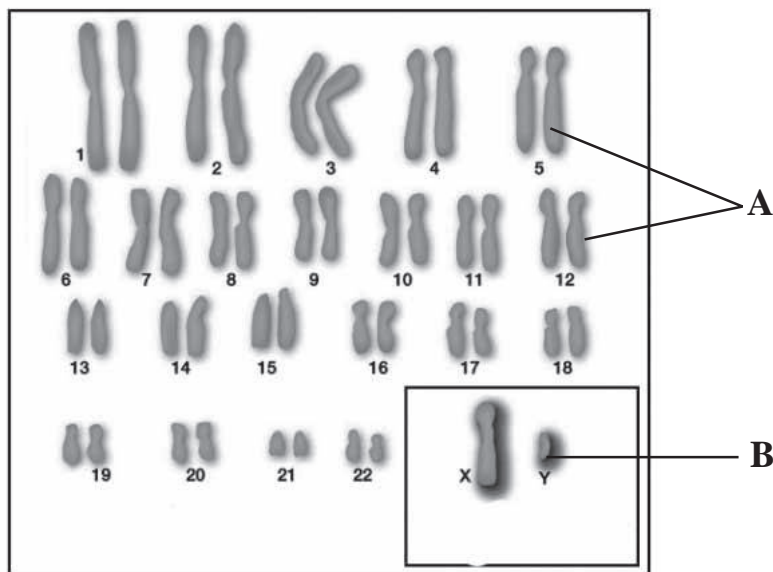c) Explain the reason for variations on the basis of theory of Natural Selection?

20.

a)   Write A and B?

b)   What are the differences between DNA and RNA?

B.   Answer any one question from 21 to 22. Each question carries 4 score (1x4=4)

21.

a)   Write A and B?

b)   Which are the sex chromosomes?

c)   Write the genetic make up of

Male 44 + ...

Female 44 + ...

22.

    a)   Which disease indicates in the figure?

    b)   Disease causing bacteria?

    c)   Disease affected organs?

    d)   Symptoms of disease?

PART V

A.   **Answer any one question from 23 to 24. Each question carries 5 score**

                                                                          (1x5=5)

23. Fever is a condition when the body temperature rises above the normal level.

    a)   Is fever a disease or symptom of disease?

    b)   When the pathogens enter the body, the temperature rises. Why?

    c)   Fever is a defense mechanism. Draw a flow chart?

    24.   Draw the picture and label Sclera, yellow spot, optic nerve, retina.

            Write the functions of Sclera and yellow spot?

BIOLOGY - ANSWER KEY - SET 5

1. Parathormone (1)

2. Night blindness is the deficiency disease of Vitamin A(1)

3. Dopamine : Neuro transmitter (1)

4. Meninges (1)

5. Callose prevents germs which crosses the cell wall (1)

6. Insulin (1)

7. Increases the heart beats (1)

8. Fungus (1)

9. Nipah (1)

10. a) B (1)

    b) Insulin, Glucagon (1)

11.

	A	B	
1)	Ardipithecus ramidus	The most primitive member of the human race	
2)	Homo habilis	Made weapons from stones and bone pieces	
3)	Homo erectus	Had the ability to stand erect	
4)	Homo sapiens	Modern man	(½x4=2)

12. A) Monocyte - Engulfs and destroys germs (1)

    B) Lymphocyte - Identifies and destroys germs specially (1)

13. a) Retina

    b) A is rod cell - helps to see in dim light and B is cone cell - helps to see in bright light and to see different colours.

    c) This diversity is due to the difference in amino acids in the opsin molecules. (3)

14. a) Phiromone (1)

   b) Attracting mates, informing the avalability of food (any two 1 score)
      determining the path of travel, signalling dangers

   c) Muscone, Civeton, Bombykol (any two, 1 score)

15. b, d and f are correct

16. Though antibiotics are effective medicines, their regular use creates many side effects. Some important side effects are listed below:

   * Regular use develops immunity in pathogens against antibiotics.

   * Destroys useful bacteria in the body

   * Reduces the quantity of some vitamins in the body   (3 score)

17. Spinal Cord   (1)

   Sensory nerves reach the spinal cord through the dorsal route (1 score)

   Cerebro spinal fluid (1)

18.

(4 mark)

202
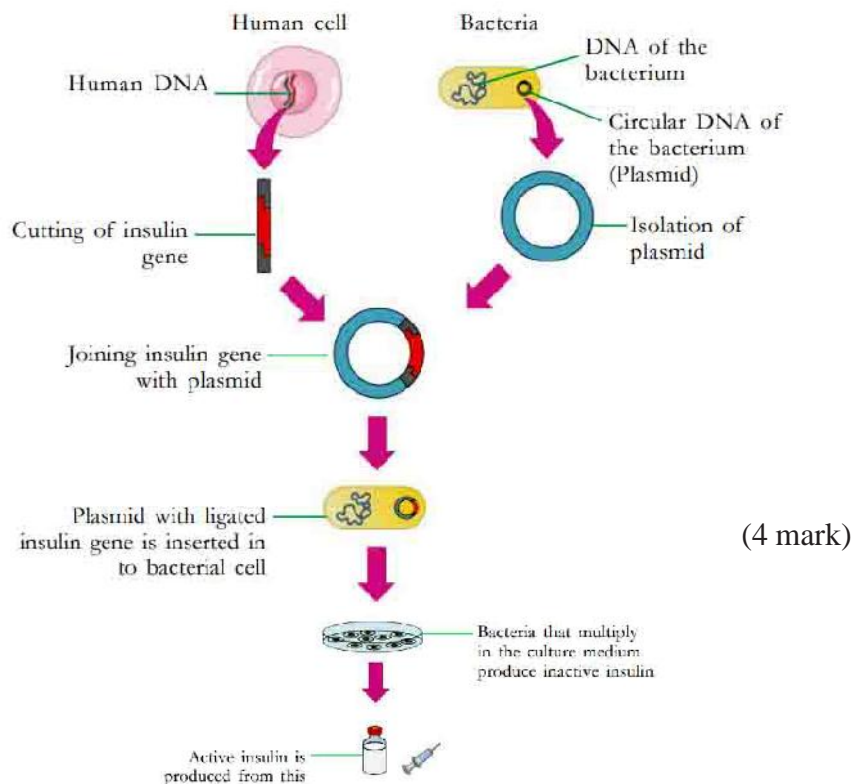
19. a) Charles Robert Darwin (1 mark)

   b) The beaks of finches (1 mark)

   c) Variations that are inherited through generations and repeated differently help to form species (1 mark)

20.   a) 'A' Sugar molecule, 'B' Phosphate (2 mark)

   b)

DNA	RNA
Two strands	One strand
De-oxy ribose	Ribose
Adenine	Adenine
Thymine	Uracil
Guanine	Guanine
Cytosine	Cytosine (2)

21.   a)   A - somatic chromosomes,   B - sex chromosomes (1)

   b)   X and Y (1)

   c)   Male 44+XY

        Female 44+XX   (2)

22.   a)   Diphtheria

   b)   Corynebacteriuim diphtheriae

   c)   Mucus membrane of the nose and throat

   d)   Fever, throat, pain, inflammation in the lymph glands (4 mark)

23.   a)   Symptom of disease.

   b)   The Presence of toxins produced by the pathogens stimulates the white blood cells.
        The Chemical substance produced by the white blood cells raises the body temperature

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c) * Pathogens enter the body

* The presence of toxins produced by the pathogens stimulates the white blood cells.

* The chemical substances produced by the white blood cells raises the body termperature

* The rise in body temperature reduces the rate of multiplication of pathogens. Increases the effect of phagocytosis.   (4)

24.   Draw the picture

Label the parts

Write functions of sclera and yellow spot (5)

MATHEMATICS

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

MATHEMATICS

Time : 2½Hrs.   Total Score : 80

Instructions:

* 15 minutes is given cool-off time
* Use Cool-off time to read the questions and plan your answers.
* Attempt the questions according to the instructions
* Keep in mind, the score and the time while answering the questions.
* The maximum score for questions from 1 to 35 will be 80.

PART I

A. Answer any Four from Quesions 1 to 6. Each carries 1 score.   **(4x1=4)**

1) Find the 19th term of the arithmatics sequence 18,17,16...........

   (1, -1, 0, 36)

2) Name the quadrilateral for which we can always draw incircle

   (Parallelogram, rectangle, trapezium, rhombus)

3) Letters of the word 'EXAMINATION' are written on different paper slip and put it in a box. One slip is taken at random. What is the probability of getting the letter 'A'?

   $(\dfrac{1}{11}, \dfrac{1}{10}, \dfrac{2}{11}, \dfrac{2}{10})$

4) In $\triangle ABC$, $\sin C = \dfrac{AB}{BC}$ then $\cos C =$ ....

   $\left(\dfrac{AB}{AC}, \dfrac{BC}{AB}, \dfrac{AC}{BC}, \dfrac{BC}{AC} \right)$

5) In the fig. O is the centre of the circle and PQ is a tangent. Then which may be a measure of $\angle$ OPA ?
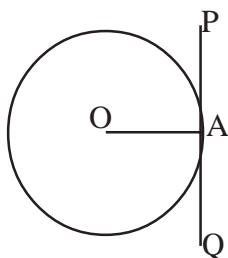
   $(60^0, 100^0, 90^0, 120^0)$

6) A circle is drawn with the line joining the points (7,-3) and (5,5) as diameter. Then the co-ordinates of the centre is

$$[(12,2); \quad (2,12); \quad (6,1); \quad (1,6)]$$

B. **7 to 10 answer all 4 questions. (1 score each.)** (4x1=4)

7) Which are the solutions of the second degree equation

$3x^2-x-10=0$

$$\left(\left(2,\frac{5}{3}\right),\left(-2,\frac{-5}{3}\right),\left(2,\frac{-5}{3}\right),\left(-1,\frac{5}{3}\right)\right)$$

8) Equation of the circle is $x^2+y^2 = 25$. Then the centre of the circle is

$$[(5,5), \quad (5,-5), \quad (0,0), \quad (-5,0)]$$

9) Slant height and height of a square pyramid are 10 cm and 6 cm respectively. Find the length of its base edge.

(16 cm, 8 cm, 4 cm, 2 cm)

10) Which of the following is a factor of the polynomial x^2-5x+6.

[(x-1), (x+2), (x-3), (x+3)
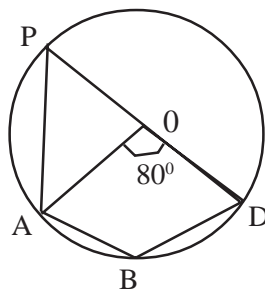
PART II

A. 11 to 15 answer any 3. (2 score each) (3x2=6)

11) n^{th} term of an arithmetic sequence is given by 3n-4.

a) Find the common difference

b) Find the 10th term
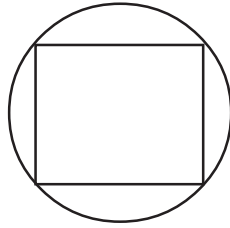
12) In figure 'O' is the centre and $\angle AOD = 80^0$

a) Find $\angle APD$

b) Find $\angle ABD$

13) A dot is put inside the circle without looking into it. Find the probability that the dot is inside the square.

14) Draw X and Y axes and mark the following points.

   a)   A (0,5); B(0,-2); C(4,0); D(-3,0), E(4,5)

   b)   Which is not a point on axes.

15) Marks obtained by some students are given below. Find the median mark.

   66, 30, 56, 20, 13, 56, 53, 70, 50, 30, 56, 45, 56

B.   16 to 18 answer any 2 questions (2 score each)   **(2x2=4)**

16)   In $\triangle ABC$ if $\tan A = \dfrac{3}{4}$ then find SinA, CosA.

17)   Find the inradius of an equilateral triangle of side 10 cm.

18)   Base perimeter and slant height of a square pyramid are 48 cm and 10 cm respectively.

   a) Find the height of he pyramid

   b) Find the volume.

PART III

A. (19 to 23 any 3 Questions. - 4 score each.   **(3x4=12)**

19)   Draw a rectangle of sides 4 cm and 3 cm. Construct a square of equal area.

20)   40m long wire is cut into two pieces. Each piece is bend to form squares. The sum of the area of these two squares is 58 m^2

   a) If length of one piece is taken as x then find the length of other.

   b) What is the length of the side of each square.

   c) Form an equation with the given data

   d) Find the length of each pieces.

21) Draw a circle of radius 3 cm. Draw a triangle in which sides are tangent to the circle with two of its angle 50^0 and 60^0 .

22) Consider the line joining the points (4,5) and (7,9)

    a) Find the slope

    b) Find two more points on the line

    c) Check whether (2,2) a ponit on this line

    d) Find the coordinate of the point of intersection of x axis and the line.

23) a) If $P(x) = x^2-5x+k$ $P(2) = 0$ then find the value of K

    b) find the value of $P(3), P(4)$

    c) Check whether $(x-3)$ is a factor of $P(x)$

B. (24 to 25 Answer any one) 4 score each   (4x1=4)

    24)   Sum of n terms of an arithmatic sequence is $3n^2+2n$

    a) Find the first term

    b) Find the common diffrence

    c) Write the sequence

    d) Find the sum of first 10 term of the arithmetic sequence 7,13,19.........

25)   In class 10 A, there are 30 boys and 20 girls. In 10 B, there are 20 boys and 15 girls.

    One student is to be selected from each class.

    a) How many ways selection can be done

    b) What is the probability of both being boys

    c) What is the probability of both being girls

    d) What is the probability of one girl and one boy.

PART IV

A. 26 to 29 answer any 3 questions (6 marks each)   **(3x6=18)**

26)   In a right triangle one of the perpendicular side is one less than two times the shortest side. Hypotenuse is one more that two times the shortest side.

        a) Considering the shortest side as x, find the other two sides.

        b) Find the sides of triangle

        c) Find the area of the traingle.

27)   Two building are 24 m apart. From the top of the smaller building , one sees the foot of the taller building at a depression of 60^0 and its top at an elevation of $30^{0.}$

        a) Draw a rough figure

        b) Find the heights of both buildings.

28)   In the figure the coodinates of 3 vertices of a square are given.
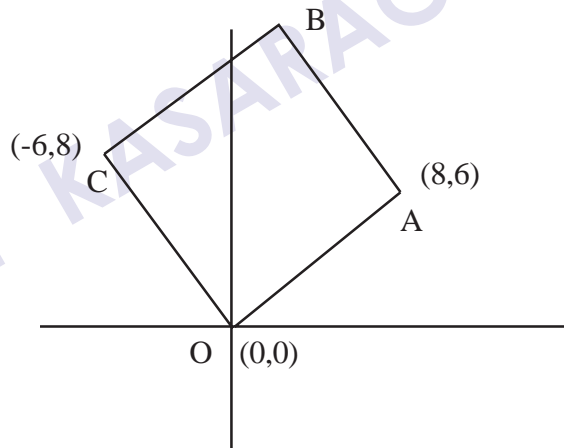
        a) Find the coordinates of the fourth vertex

        b) Find the length of its side

        c) Find the area.

29)   a) In figure O is the centre of the circle and PA is a tangent.

          If PA = 5 cm and OP = 4cm then find the radius of the circle.

        b) Draw a circle of radius 3 cm. Draw tangent from a point which is at a distance of 4 cm away from the centre of the circle. Measure the length of the tangent.
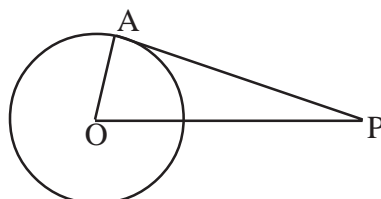
B. (30 to 32 any, 2, 6 score) (2x6=12)

30) Draw a rectangle of sides 6 cm and 4 cm. Draw another rectangle with one side 7 cm and area equal to that of the first rectangle.
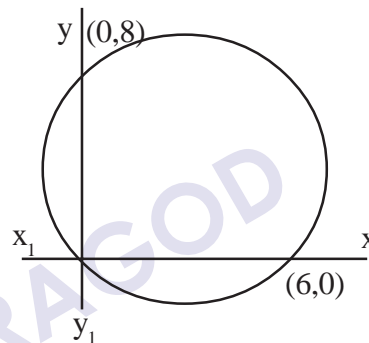
31) a) In the figure below find the coordinate of the centre of the circle.

   b) Find the radius.

   c) Find the equation of the circle.

   d) Find the centre of the circle with equation.

   $x^2+4x+y^2 - 6y+12 = 0$

32) In a locality the house are classified according to the consumption of electricity.

Consumption of Electricity	Number of House
0-60	4
60-120	10
120-180	12
180-240	15
240-300	14
300-360	4

a) Find the total number of houses

b) According to the hypothesis what is the consumption of electricity of 27th house.

c) Find the median

PART V

A. 33 to 35 Answer any 2 (8 score each) (2x8=16)

33) The sum of first nine terms of an arithmetic sequence is 261 and sum of next 6 terms is 444.

    a) Find 5th and 8th term

    b) Find the first term and common difference

    c) Write the sequence

    d) Write the algebraic expression of the arithmetic sequence

    e) Find the sum of first 15 terms of the arithmetic sequence 6,12,18..........

34) Height and radius of a conical vessel are 8cm and 5 cm respectively. It is completely filled with water. Some lead balls of radius 0.5cm were immersed in it. One fourth of water spilled out. Find the number of balls immersed.

35) Read the mathematical concept carefully and answer the following.

    $1 = 1$

    $1+2 = 3$

    $1+2+3 = 6$

    $1+2+3+4=10$

Consider the sequence 1,3,6,10.......

It is the sum of natural numbers. These numbers are called traingle numbers.

    $1+3 = 4$; $3+6 = 9$, $6+10 = 16$ ....

    1, 4, 9, 16, ... are called square numbers. Each square number is the sum of two consecutive triangle numbers.

    a) Find the next term of the sequence 1,3,6,10.............

    b) Find the fifth square number

    c) Write the algebraic form of the sequence of traingle numbers

    d) Find the 100th traingle number

    e) Write the algebraic expression of the sequence of square numbers.

    f) If 20th triangle number is x and 21st triangle number is y then y-x = ...

    g) $\dfrac{50 \times 51}{2} + \dfrac{51 \times 52}{2}$ is a square number, then next square number is ....

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Answer Key - Set 2 Mathematics

PART I

1. 0   (1)

2. rhombus   (1)

3. $\dfrac{2}{11}$ (1)

4. $\dfrac{AC}{BC}$ (1)

5. 60^0 (1)

6. (6,1)   (1)

7. $\left(2, \dfrac{5}{3}\right)$ (1)

8. (0,0)   (1)

9. 16cm   (1)

10. (x-3)   (1)

11. a) 3   (1)

    b) 26, 3x10-4

      = 30-4

      = 26   (1)

12. a) $\angle APD = \dfrac{80}{2}$

      = 40   (1)

    b) $\angle ABD = 180-40$

      = 140   (1)

13.

    radius of the circle r

    diameter of circle = diagonal of square

    probability $\left(\dfrac{1}{4}, 0\right)$ (2)
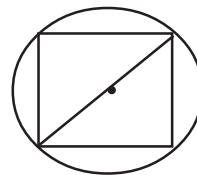
14. a) for drawing X, Y axes and marking the points. (1)

   b) E or (4,5) (1)

15. Arranging in ascending or descending order (1)

   13, 20, 30, 30, 45, 50, 53, 56, 56, 56, 56, 66, 70

   Median = 53 (1)

16. $SinA = \dfrac{3}{5}$ (1)

   $CosA = \dfrac{4}{5}$ (1)

17. $r = \dfrac{A}{S}$

   $A = \dfrac{\sqrt{3}}{4} \times 10 \times 10$ (1)

   $S = 15$

   $r = \dfrac{\sqrt{3} \times 10 \times 10}{4 \times 15}$

   $= = \dfrac{5}{\sqrt{3}}$ (1)

18. Area of triangle $= \dfrac{48}{4}$

   $= 12$

a) height $= 8$ (1)

b) Volume $= \dfrac{1}{3} \times 12^2 \times 8$

   $= 384 cm^3$ (1)

19. For drawing rectangle (1)

   for drawing square (3)

20. a) $40 - x$ (1)

   b) $\dfrac{x}{4}, \dfrac{40-x}{4}$ (1)

c) $\left(\dfrac{x}{4}\right)^2 + \left(\dfrac{40-x}{4}\right)^2 = 58$ (1)

d) 28, 12 cm (!)

21. For drawing the circle with radius 4 (1)

    For drawing triangle (3)

22. a) Slope = $\dfrac{4}{3}$ (1)

    b) (10, 13), (13, 17) (2)

    c) $\dfrac{2-9}{2-7} = \dfrac{-7}{-5} = \dfrac{7}{5}$

       not a point. (1)

    d) Point on x axis (x,0)

       Slope = $\dfrac{5-0}{4-x} = \dfrac{4}{3}$

       $\dfrac{5}{4-x} = \dfrac{4}{3}$

       $15 = 16 - 4x$

       $4x = 16 - 15$

       $= 1$

       $x = \dfrac{1}{4}$

       point $= \left(\dfrac{1}{4}, 0\right)$ (1)

23. a) $2^2 - 5 \times 2 + k = 0$

       $-6 + k = 0$

       $k = 6$ (1)

    b) P(3) = 0 (1)

       P(4) = $4^2 - 20 + 6$

       $= 2$ (1)

    c) P(3) = 0

       $\therefore$ a factor (1)

24. a) 5 (1)

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b) 6   (1)

c) 5, 11, 17......   (1)

d) 320 + 20 = 340   (1)

25. a) 50x35 = 1750   (1)

b) $\dfrac{600}{1750}$ (1)

c) $\dfrac{300}{1750}$ (1)

d) $\dfrac{850}{1750}$ (1)

26. a) 2x-1, 2x+1   (1)

b) $x^2+(2x-1)^2 = (2x+1)^2$ (1)

$x^2+4x^2-4x+1 = 4x^2+4x+1$

$x^2-8x = 0$ (1)

$x(x-8) = 0$ x=8   (1)

Sides 8cm, 15cm, 17cm   (1)

27.

(1)

Height of the small building = $24\sqrt{3}$ (2)

Height of taller building

= $\dfrac{24}{\sqrt{3}} + 24\sqrt{3}$

= $8\sqrt{3} + 24\sqrt{3}$

= $32\sqrt{3}$ (3)

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28. a) (1,7) (2)

b) $\sqrt{8^2 + 6^6} = 10$ unit (2)

c) 10 x 10 = 100 square unit (2)

29. a) radius^2 = 5^2 - 4^2

= 9

radius = 3 (2)

For drawing the figure (3)

Length = 5cm (1)

30. For drawing rectangle of sides 6, 4 (1)

Drawing another rectangle with one side 7 (5)

31. a) (3, 4) (1)

b) 5 unit (1)

c) (x-3)^2 + (y-4)^2 - 25 (2)

d) (-2,3) (2)

32.

60	4
120	14
180	26
240	41
300	55
360	59

a) 59 (1)

b) 182 (2)

c) 194 (3)

33. a) 5th term o $= \dfrac{261}{9} = 29$　(1)

8th term $= \dfrac{261 + 444}{15}$

$= \dfrac{705}{15} = 47$　(1)

b) $d = \dfrac{47 - 29}{8 - 5} = \dfrac{18}{3} = 6$　(1)

$f = 29\text{-}24 = 5$　(1)

c) 5, 11, 17,..........　(1)

d) 6n-1　(1)

e) 705 + 15 = 720　(2)

34. Volume of the cone

$= \dfrac{1}{3} \times \pi \times 5 \times 5 \times 8$　(1)

Volume of sphase $= \dfrac{1}{4}\left(\dfrac{1}{3} \times \pi \times 5 \times 5 \times 8 \right)$　(2)

$= \dfrac{1}{4} \times \pi \times \dfrac{5}{10} \times \dfrac{5}{10} \times \dfrac{5}{10}$　(2)

$n = \dfrac{4}{3} \times \pi \times \dfrac{5}{10} \times \dfrac{5}{10} \times \dfrac{5}{10} = \dfrac{1}{12} \times \pi \times 5 \times 5 \times 8$

n = 100 (3)

35. a) 15 (1)

b) 25 (1)

c) $n\left(\dfrac{n+1}{2}\right)$ (1)

d) $\dfrac{100 \times 101}{2} = 5050$ (1)

e) n^2 (1)

f) 21 (1)

g) $52^2 = 2704$ (2)

EQUIP - DIET KASARAGOD

SSLC Model Examination March 2022

MATHEMATICS

Time : 2½ Hrs.   Total Score : 80

Instructions:

*   15 minutes is given cool-off time
*   Use Cool-off time to read the questions and plan your answers.
*   Attempt the questions according to the instructions
*   Keep in mind, the score and the time while answering the questions.
*   The maximum score for questions from 1 to 35 will be 80.

PART I

A. From 1 to 6, answer any four questions. Each carries 1 score.   (4x1=4)

1)   The algebraic form of an arithmetic sequence is 4n-3. What is the common difference ?

(4,-4,3,-3)

2)
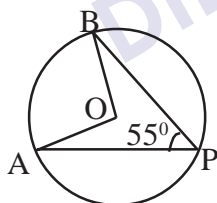
In the figure O is the centre of the circle.

If $\angle APB = 55^0$, What is $\angle AOB$

(55^0, 110^0, 125^0, $22\frac{1}{2}^0$)

3)   In a box, there are 10 slips numbered 1,2,3........10. If one slip is taken from the box, what is the probability of getting a prime number ?

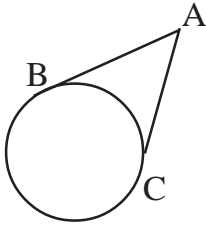($\frac{5}{10}$, $\frac{4}{10}$, $\frac{3}{10}$, $\frac{6}{10}$)

4)   In traingle ABC $\angle B = 90^0$,
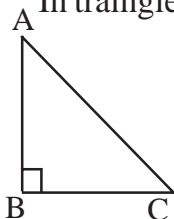
what is sin C = ...?

($\frac{AB}{BC}$, $\frac{BC}{AC}$, $\frac{AB}{AC}$, $\frac{BC}{AB}$)

5.

In the figure, AB and AC are tangens to the circle.

If AB = 5cm What is AC ?

$$\left(5\sqrt{2}cm, \ 5\sqrt{3}cm, \ 5cm, \ \frac{5}{2}cm\right)$$

6. Find the slope of the line passing through the points (1,2) and (3,4)

   (1, -1, 0, 2)

B. Answer all questions from 7 to 10. Each carries 1 Score.   (4x1=4)

7. The solution of the equation $x^2 + 1 = 0$ is ....

   (1, -1, 0, No solution)

8. The slant height of a square pyramid is 10 cm and its height is 8 cm. Find the base edge.

   (6, 12, 10, $10\sqrt{2}$)

9. A sector of radius 16 cm and central angle 120^0 is rolled up into a cone. What is the slant height of the cone.

   (8, 10, 16, $16\sqrt{3}$)

10. In the polynomial $P(x) = x^3-1$, $P(1) = 0$ write one factor of this polynomial
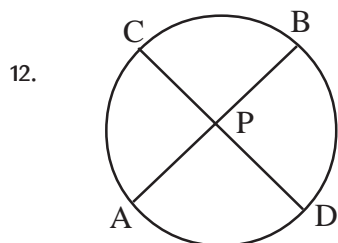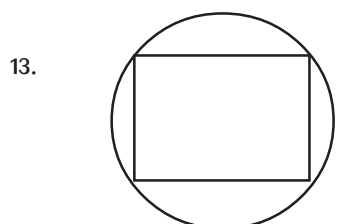
    (x+1 x-1, x+2, x-2)

PART II

A.   Answer any 3 questions from 11 to 15/. Each carries 2score.   (3x2=6)

11.   a) Write the algebraic form of the arithmetic sequence 1,6,11...........
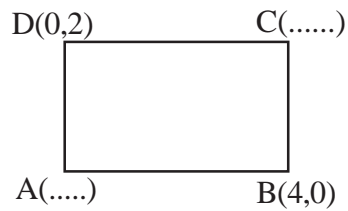
       b) Find the 15th term of this sequence

12.

In the figure PA = 4cm, PB = 6cm, PC = 2cm, Find PD.

13.

A dot is put inside the circle, without looking. What is the probability that the dot is inside the square.

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14. Find the co-ordinates of other two vertics of the rectangle given below.

D(0,2)　　　　　C(......)

A(.....)　　　　　B(4,0)

15. The weights of 25 students are given below. Find the median weight.

Weight in Kgs	No. of students
35kg	4
40kg	5
50kg	6
55kg	6
60kg	2
65kg	2

B. **From questions 16 to 18, answer any 2. (Each carries 2 scores)**　　　　　**(2x2=4)**
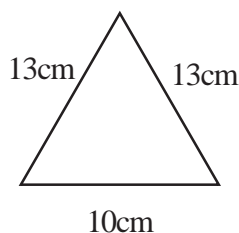
16. In triangle PQR, $\angle Q = 90^0$, $\operatorname{Sin} P = \dfrac{7}{25}$ Find Tan P.

17. The perimeter of a traingle is 20 cm and radius of the incircle is 3 cm, find the area of the traingle.

18. The measures of one lateral face of a square pyramid are given below.

a) Find the sum of all edges of the Square pyramid

b) Find the slant height.

13cm　　13cm

10cm

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PART III

A. From Questions 19 to 23, answer any 3 questions. Each carries 4 score. (3x4=12)

19. Draw a rectangle with sides 5 c.m., 3 cm. then construct a square of equal area.

20. In the equation $x^2 + 10x = 24$,

    a) What number should be added on both sides to make it a perfect square?

    b) Find the values of 'x'

21. In a right traingle ABC, right angled at B, BC=12 cm, AB =5cm, What is the radius of the circle inscribed in the traingle.
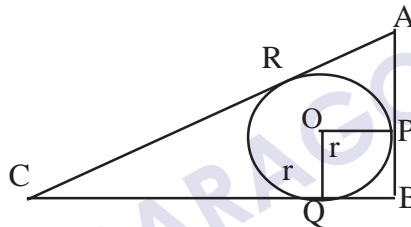
22. A(-2, -2), B(2, -2), C(0,1) are vertices of triangle ABC.

    a) Find the co-ordinates of the mid points of the sides of $\triangle ABC$

    b) Prove that traingle ABC is an isosceles traingle.

23. Draw a circle of radius 2.5 cm. Then draw a triangle with measures 50^0, 60 whose touches the circle.

PART - III

B. Questions from 24 to 25, answer any one. Each carris 4 score. (4x1=4)

24. The sum of n terms to an arithmetic sequnce is $3n^2+2n$.

    Find

    a) The first term

    b) Find the common difference

    c) Find the nth term

25. In a box there are 3 black and 7 white balls. In another box, there are 4 black and 6 white balls. If One ball is taken from each box without looking into it.
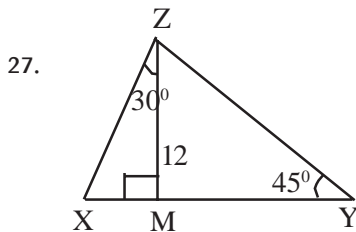
    Find the probability that,

a) both being black

b) both being white

c) Atlest one ball is black

PART IV

A. Quesions from 26 to 29, answer any 3. Each carries. 6 score. (3x6=18)

26. The length of a rectangle is 4 cm more than its breadth ; the area of that rectangle is 96cm^2
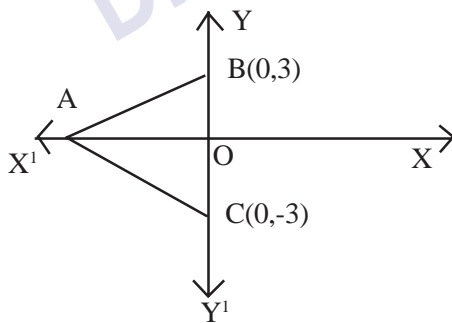
a) If the breadth is 'x' find the length.

b) Find the length and breadth of the traingle.

27.

In the figure MZ=12 cm, $\angle$ MZX =30^0

$\angle$ Y=45^0 and ZM is Perpendicular to XY

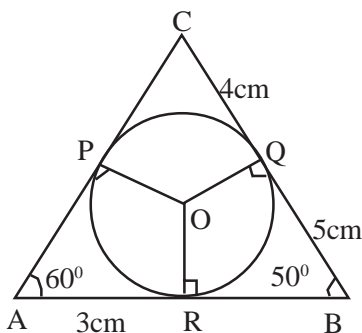a) Find MX, XY

b) Find the perimeter of Δ XYZ

c) Find XY : YX : XZ.

28. In the figure Δ ABC is an equilateral one .

a) Find the length of one side of triangle ABC.

b) Find the perimeter of triangle ABC

c) Find the co-ordinates of A.

29.

In triangle ABC $\angle$ A = 60^0, $\angle$ B = 50^0, AR = 3cm,
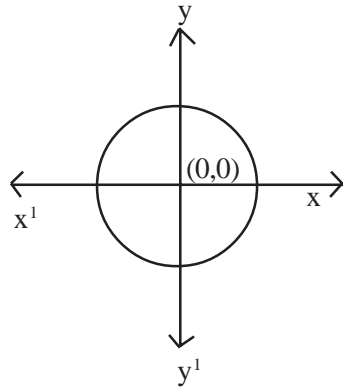
CQ = 4cm, BQ = 5cm

a) Find the perimeter of Δ ABC

b) Find $\angle$ POR, $\angle$ POQ

c) Find $\angle$ RPQ, $\angle$ BRQ

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B. Questions from 30 to 32, answer any 2. Each carries 6 score.   (2x6=12)

30) Draw a rectangle with sides 6 cm and 4 cm.

Draw another rectangle of same area with one side 7 cm.

31) In the figure, the radius of the circle is 5 cm. Centre is the origin.

a) Find the co-ordinates of the ponits of intersection of the circle with the X and Y axes.

b) Write the equation of the circle.

c) Find the Co-ordinates of any other two points on the circle.

32. The details of income tax given by the teachers of a school is given below.

a) Income tax in rupees	Number of Teachers
30,000 - 40,000	4
40,000 - 50,000	6
50,000 - 60,000	5
60,000 - 70,000	4
70,000 - 80,000	**4**

a) The income tax of the teachers at what position is taken as the median ?

b) What is the assumed income tax of 11th teacher?

c) Find the median tax.

PART V

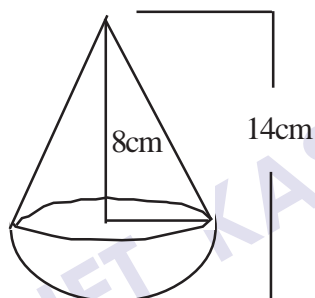**A. Questions from 33 to 35,   answer any 2, Each carries 8 score. (2x8=16)**

33.
$$1$$
$$3 \quad 5 \quad 7$$
$$9 \quad 11 \quad 13 \quad 15 \quad 17$$
....
....
....

    a) Write the next two lines of this pattern

    b) How many numbers are there in 10th row.

    c) Find the sum of all numbers in the 10th row..

    d) Write the algebraic form of the arithmetic sequence 1, 3, 5, 7, ...

    e) Find the first and last numbers in the 10th line

34.

8cm   14cm

A toy is made in the form of a cone mounted on a hemisphere.

The total length of the toy is 14 cm and height of the cone alone is 8 cm.

    a) Find the radius of the hemisphere ?

    b) Find the total surface area of the toy.

    c) Find the total cost of painting 500 such toys at the rate of Rs. 2 per square centimeter.

35.   Read the following mathematical ideas and answer the following questions.

    We have $(x-3)(x-4) = x^2 - 7x + 12$

    if $x^2 - 7x + 12 = 0$ then $(x-3)(x-4) = 0$

    $x-3 = 0$ or $x-4 = 0$

    $x=3$ or $x=4$

      Therefore 3 and 4   are the solutions of the equations $x^2 - 7x + 12 = 0$

        using algebra

    $(x-a)(x-b) = x^2 -(a-b) x+ab$

That is a and b are the solutions of the equation $x^2 -(a+b) x+ab=0$

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If p & q are the solutions of a second degree equation then the equation is

$x^2 - (p+q) x+pq = 0$

a) if m and n are the solutions of the equation $x^2-17x+72 = 0$ then

   m+n = ...   m x n = ...

b) Write the a second degree equation where the soluions are 5 & 7

c) Write the a second degree equation where the soluions are -5 and -7

d) Find the solutions of the equation $2x^2 - 24x + 70 = 0$

e) Find the sum and product of the solutions of the equation $ax^2+bx+c = 0$

f)   Write the coefficient in the equation $x^2-1=0$.

g) Write the solutions of $x^2-1 = 0$

....

MATHEMATICS - ANSWER KEY - SET 3

PART I

A   1. 4   (1)

2. 110^0 (1)

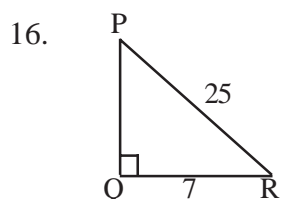3. $4/10$ (1)

4. $\dfrac{AB}{AC}$ (1)

5. AC = 5cm   (1)

6. 1   (1)

B   7. No Solution   (1)

8. 12cm   (1)

9. 16cm   (1)

10. x-1 is a factor   (1)

PART II

A   11. a) $x_n = 5n-4$ (1)

b) $x_{15} = 5 \times 15-4 = 71$ (1)

12. PA x PB = PC X PD

4 x 6 = 2 x PD   (2)

$\therefore$ PD $= \dfrac{4 \times 6}{2} = 12$

13.

$$\dfrac{\left(\dfrac{r}{\sqrt{2}}\right)^2}{\pi r^2} = \dfrac{1}{2\pi}$$ (2)

14.   A (0,0)   C(4,2)   (1)

15.   Median Weight $= \dfrac{25+1}{2} =$ Weight of 13th student = 50kg   (2)

16.

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$$PQ = \sqrt{25^2 - 7^2} = \sqrt{625 - 49} \tag{1}$$

$$= \sqrt{576} = 24cm \tag{1}$$

$$\tan P = \frac{7}{24}$$

17. Area $= rs = 3 \times \dfrac{20}{2} = 10cm^2$ $\qquad$ (2)

18. a) $4 \times 13 + 4 \times 10$

$\qquad = 52 + 40 = 92cm$ $\qquad$ (1)

$\qquad$ b) $\sqrt{13^2 - 5^2} = \sqrt{169 - 25} = \sqrt{144} = 12cm$ $\qquad$ (1)

PART III

A 19. To draw the square with specific measures $\qquad$ (4)
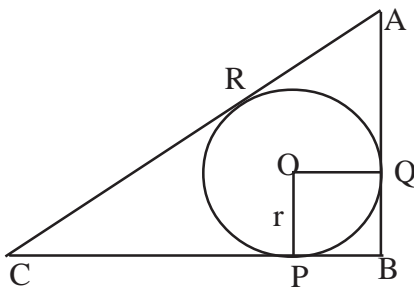
20. a) $5^2 = 25$

$\qquad$ b) $x^2 + 10x + 25 = 24 + 25 = 49$

$\qquad\qquad$ ie $(x+5)^2 = 7^2$ $\qquad$ (2)

$\qquad$ x+5 = 7 $\quad\Big|\quad$ x+5 = -7

$\qquad$ x=7-5 = 2 $\;\Big|\;$ x=-7-2 = -9 $\qquad$ (2)

21.

$AC^2 = 12^2 + 5^2 = 13^2$

$AC = 13$

$CP = 12 - r$

$CR = 12 - r$
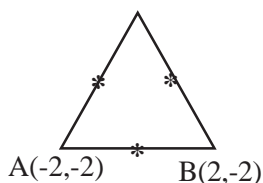
$AR = AQ = 5-r$

$12-r + 5-r = 13$

$17-2r = 13$

$r = \dfrac{17-13}{2} = \dfrac{4}{2} = 2$ $\qquad$ (4)

22.

Midpoint of AB.

$\left(\dfrac{-2+2}{2}, \dfrac{-2+-2}{2} \right)$

$= \mathbf{(0, -2)}$

$$\text{Midpoint of BC} = \left(\frac{2+0}{2}, \frac{-2+1}{2}\right)$$

$$\text{Midpoint of AC} = \left(\frac{-2+0}{2}, \frac{-2+1}{2}\right)$$

$$= (1, -\tfrac{1}{2})$$

$$\text{Midpoint of AC} = = (1, -\tfrac{1}{2}) \tag{3}$$

b) Δ ABC is an isosceles triangle. (1)

23. Draw the triangle with the specific measures. (4)

B 24. a) 5 (1)

b) $\dfrac{a}{2} = 3 \quad \therefore a = 6$ (1)

c) $\dfrac{a}{2} + b = 2$

$3 + b = 2 \Rightarrow b = 2 - 3 = -1$

$\therefore x_n = an + b = \mathbf{6\text{-}1}$ (2)

25. a) $\dfrac{3 \times 4}{10 \times 10} = \dfrac{12}{100}$ (1)

b) $\dfrac{7 \times 6}{10 \times 10} = \dfrac{42}{100}$ (1)

c) $1 - P$ (Both are black)

$= 1 - \dfrac{12}{100} = \dfrac{88}{100}$ (2)

26. a) x+4 (1)

b) x(x+4) = 96

$x^2 + 4x = 96$

$x^2 + 4x + 2^2 = 22 + 96$

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$(x+2)^2 = 100 = 10^2$

$x+2 = 10$	breadth = 8cm
$x=10-2=8$	length = 12cm

(5)

27. a) $MX = \dfrac{12}{\sqrt{3}}$, $XY = \dfrac{12}{\sqrt{3}} + 12$ (2)

 b) Perimeter = PQ + QR + PR

 $= \dfrac{24}{\sqrt{3}} + 12\sqrt{2} + \dfrac{12}{\sqrt{3}} + 12$

 $\dfrac{36}{\sqrt{3}} + 12\sqrt{2} + 12$ (2)

28. a) 6cm (1)

 b) 18cm (2)

 c) A is $\left(-3\sqrt{3}, 0\right)$ (3)

29. a) AB + BC + AC

 $= 8 + 9 + 7 = 24$cm (2)

 b) $\angle PQR = 120^0$, $\angle POQ = 110^0$ (2)

 c) $\angle RPQ = 65^0$, $\angle BRQ = 65^0$ (2)

B 30. Draw the rectangle. Draw a rectangle of the same area. (6)

31. a) (5,0) (-5,0) (0,5) (0,-5) (2)

 b) $x^2 + y^2 = 25$ (2)

 c) (3,4) (-3,4) (2)

32. a) $\dfrac{23+1}{2}$ = Tax of 12th teacher (1)

 b) Assumed tax for 11th teacher.

 $d = \dfrac{10000}{5} = 2000$

 $= 50000 + \dfrac{d}{2}$

$$= 50000 + 1000$$
$$= 51000 \tag{2}$$

c) Median Tax $= 51000+2000$

   53,000 (3)

33. a) 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49 (3)

   b) $x_n = 2n\text{-}1$

   $x_{10} = 2\text{x}10\text{-}1 = 19$ (3)

   c) $\frac{19}{2}(163+199) = 19\text{x}181 = 3439$ (3)

   d) $2n\text{-}1$

34. a) 6cm (1)

   b) $132\text{x}3.14\text{cm}^2$

   $= 2\text{x}\pi\text{x}6^2 + \pi\text{x}6\text{x}10$

   $= 72\pi + 60\pi = 132\pi cm^2$

   $= 132\text{x}3.14\text{cm}^2$

   $= 414.48 \text{ cm}^2$ (4)

   c) $414.48 \text{ x } 2\text{x}500$

   $= 828.96 \text{ x } 500 \text{ rupees}$ (3)

   $= \textbf{414,480} \text{ rupees}$

35. a) $m+n = 17 \qquad mn = 72$ (1)

   b) $x^2 = 12x+35 = 0$ (1)

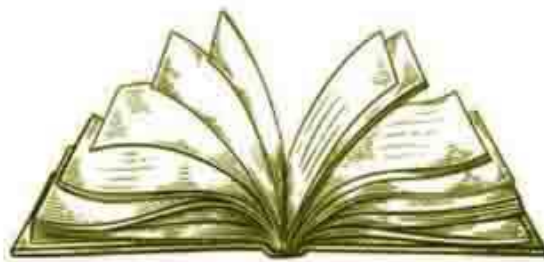   c) $x^2 + 12x + 35 = 0$ (1)

   d) $2x^2 - 24x + 70 = 0$ (1)

   $= x^2 - 12x + 35 = 0$

   Solutions $x=5, x=7$ (1)

   e) Sum $= \dfrac{-b}{a}$, Product $= \dfrac{c}{a}$ (1)

   f) 0 (1)

   g) $x=1, x=\text{-}1$ (1)

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