

SECTION – I

CHOOSE THE CORRECT ANSWER

Q.No.	ANSWER	MARK	Q.No.	ANSWER	MARK
1	Changes in the body cell	1	9	Sulphuric acid	1
2	Entamoeba histolytica	1	10	$365.25 \times 24 \times 60 \times 60 \times 3 \times 10^8 \text{ m}$	1
3	Relaxin	1	11	312	1
4	Anemochory	1	12	Spring balance	1
5	Carbon di oxide	1	13	8V	1
6	Colloidal solution	1	14	Electric energy	1
7	Suspension	1	15	Black	1
8	Displacement reaction	1			

SECTION –II – ( 40 MARKS )

Q.No.	Answer	Division of mark	Total mark									
16	<p>Homo habilis ↓ Homo erectus ↓ Neanderthal man ↓ Homo sapiens</p>	½ ½ ½ ½	2									
17.	<p><b>Phenotype</b> :Expression of morphological characters as tall or dwarf plant, violet or white flower is called Phenotype. <b>Genotype</b> :The expression of gene (or genetic make up) of an individual for a particular trait is called Genotype.</p>	1 1	2									
18.	<p><b>Monoclonal antibodies</b> are the antibodies produced from cloned cells by hybridoma technology. <b>Uses:</b> Monoclonal antibodies are now used in treatment of cancer.</p>	1 1	2									
19.	<p>Variation may be defined as differences in the characteristics among the individuals of the same species (A) Intra specific variation or among the different genera (B) Intergeneric variation or among the different species (C) Inter specific variation. <b>Types of Variations</b> <b>a. Somatic Variation</b> - It pertains to body cells and it is not inherited. <b>b. Germinal Variation</b> - It pertains to germ cells or gametes and it is inheritable. It leads to speciation and evolution.</p>	1 1	2									
20.	<p><b>DPT</b> is known as <b>Triple Antigen</b>. The three diseases which, can be prevented by using triple antigen are 1.Diphtheria, 2.Pertussis and 3.Tetanus</p>	1 1	2									
21.	<table border="1"> <thead> <tr> <th>Diseases that are transmitted by houseflies</th> <th>Causative pathogens</th> </tr> </thead> <tbody> <tr> <td>1.Amoebic dysentery (Amoebiasis)</td> <td>Entamoebahistolytica– a protozoan parasite</td> </tr> <tr> <td>2.Typhoid</td> <td>Salmonella typhi – Bacteria</td> </tr> </tbody> </table>	Diseases that are transmitted by houseflies	Causative pathogens	1.Amoebic dysentery (Amoebiasis)	Entamoebahistolytica– a protozoan parasite	2.Typhoid	Salmonella typhi – Bacteria	1 1	2			
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		of Vitamin A	mutated gene.																		
23.	THYROID GLAND VENTRAL VIEW			Diagram 1 mark Parts 1 mark	2																
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29.	<u>Henry's Law</u> Increase in pressure increases the solubility of gases. At a given temperature, the mass of gas dissolved in a fixed volume of liquid is directly proportional to the pressure of the gas on the surface of the liquid. This is called Henry's Law.			2	2																
30.	<b>Brownian movement:</b> The phenomenon by which the colloidal particles are in continuous random motion is called <b>Brownian movement</b> .			2	2																
31.	Tyndall Effect: The phenomenon by which colloidal particles scatter light is called Tyndall Effect. If a beam of light is allowed to pass through a true solution, some of the light will be absorbed and some will be transmitted. The particles in true solution are not large enough to scatter light. However, if light			2	2																

	is passed through a colloid, the light is scattered by the larger colloidal particles and the beam becomes visible. This effect is called TYNDALL EFFECT			
32.	Isotopes - $_{17}\text{Cl}^{35}$ , $_{17}\text{Cl}^{37}$ Isobars - $_{18}\text{Ar}^{40}$ , $_{20}\text{Ar}^{40}$	1 1	2	
33.	<b>Atom</b>	<b>Molecules</b>	1  1	
	The smallest particle of an element that can take part in a chemical reaction	The smallest particle of an element or a compound that can exist freely.		
	An atom is a non bonded entity.	A molecule is a bonded entity.		
	An atom may or may not exist freely.	An molecule can exist freely		
34.	a) The PH of acid is <b>less</b> than 7. b) <b>Carbonic acid</b> is used in aerated drinks.	1 1	2	
35.	$\text{P}^{\text{OH}} = -\log_{10}[\text{OH}^-]$ $= -\log_{10}[1.0 \times 10^{-10}]$ $\text{P}^{\text{OH}} = 10$	$\text{P}^{\text{H}} + \text{P}^{\text{OH}} = 14$ $\text{P}^{\text{H}} = 14 - \text{P}^{\text{OH}}$ $= 14 - 10 ; \quad \text{P}^{\text{H}} = 4$	1 1	2
36.	A - $\text{CaCO}_3$ B - $\text{CO}_2$ a) slaked lime b) C - $\text{CaCl}_2$ (calcium chloride) D - $\text{H}_2\text{O}$ (water) c) Basic	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2	
37.	<b>Mass</b>	<b>Weight</b>	1  1	
	Fundamental quantity.	Derived quantity.		
	It is the amount of matter contained in a body.	It is the gravitational pull acting on the body.		
	Its unit is kilogram.	Its unit is newton.		
	Remains the same.	Varies from place to place.		
38.	Match 1. Force - $ma$ 2. momentum - $mv$ 3. Moment - $Fd$ 4. Gravity - $GM/R^2$	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2	
39.	i. This is because the turning effect of a body depends upon the perpendicular distance of the line of action of the applied force from the axis of rotation. ii. Longer the perpendicular distance, less is the force required to turn the body. Therefore spanner is provided with a long handle	1  1	2	
40.	Because to minimize the force of impact and to control the length of time it takes for his body to absorb the incoming momentum of his opponent's fist.	2	2	
41.	i. The law of conservation of momentum. ii. Newton's third law of motion.	1  1	2	
42.	<b>Nuclear fission:</b> The process of breaking up of the nucleus of a heavier atom into two fragments with the release of large amount of energy is called nuclear fission. <b>Nuclear Fusion</b> Nuclear fusion is a process in which two or more lighter nuclei combine to form a heavier nucleus.	1  1	2	
43.	Fuse wire is made up of an alloy of <b>lead (37%) and tin (63%)</b> which has high resistance and <b>low melting point.</b>	$\frac{1}{2}$ 1 $\frac{1}{2}$	2	
44.	a, $i_1 + 2A = 3A$ b, $3A = 1A + i_2$ c, $i_2 = i_3 + 1.5A$ $i_1 = 3A - 2A$ $i_2 = 3A - 1A$ $2A = i_3 + 1.5A$ <b><math>i_1 = 1A</math></b> <b><math>i_2 = 2A</math></b> $2A - 1.5A = i_3$ <b><math>0.5A = i_3</math></b>	1  1	2	
45.	i. The wind speed should be higher than 15Km/hour to maintain the required speed of the turbine. ii. The speed of the wind is not constant. so, same amount of electricity cannot	1  1		



dendrites and axon.

### I. Cell body

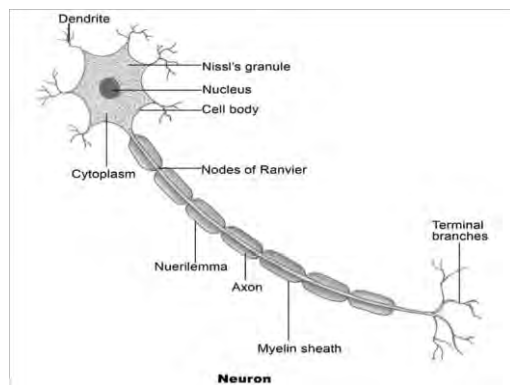
The cell structure is irregular in shape or polyhedral. It is also called cyton. Cell body contains cytoplasm with typical cell organelles and certain granular bodies called Nissle's granules. Nissle's granules are a group of ribosomes for protein synthesis.

### II. Dendrites

Dendrites or Dendrons are short fibres which branch repeatedly and protrude out of the cell body. Dendrites transmit electrical impulses towards the cyton.

### III. Axon

One of the fibres arising from the cell body is very long with a branched distal end and it is called Axon. The distal branch of the axon terminates in bulb-like structures called synaptic knob filled with chemicals called neuro transmitters. The cytoplasm of the axon is known as axoplasm. The axon which is covered by a myelin sheath is formed of many layers of Schwann cells. The outermost layer of Schwann cells is called Neurilemma. The gaps left by the myelin sheath are called Nodes of Ranvier. Neurilemma is discontinuous at Nodes of Ranvier. The myelin sheath ensures rapid transmission of electric impulses.



1

1

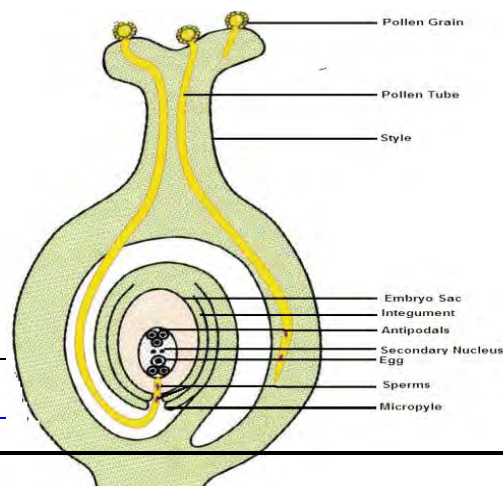
1

48. i) A fruit is developed by the process Fertilization.

### ii) Process of Fertilization

1. Germination of pollen grain :If a pollen grain falls on a suitable stigma, it starts germinating. A mature pollen consists of two cells. The larger one is vegetative cell and the smaller one is generative cell. The vegetative cell starts growing and emerges through the germination pore. It develops through the style as a long tube known as pollen tube. The generative cell gets into the tube and divides into two male gametes (sperms).

2. Fertilization :The pollen tube enters into the embryo sac through micropyle. At this time, the pollen tube bursts open, gametes are released from the pollen tube and enter into the embryo sac. One of the gametes fuses with the egg and the other fuses with the secondary nucleus. The fusion of a male gamete (Sperm) with a female gamete (egg) is known as fertilization. The fertilized egg is known as zygote which develops into an embryo.



1

2

5





Register  
Number

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## SSLC Quarterly Examination 2017-18

Time Allowed : 2½ Hours]

### SCIENCE

[Max. Marks : 75

- INSTRUCTION : 1. Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.  
2. Use blue or black ink to write and pencil to draw diagrams.

#### Section – I

Note : 1. Answer all the fifteen questions.

15 x 1 = 15

2. Choose the correct answer from the alternatives given in the brackets

- Somatic gene therapy causes  
(Changes in sperm, Changes in progeny, changes in body cell, changes in ovum)
- An example of protozoan infecting our intestine is -----  
(Plasmodium vivax, Entamoeba histolytica, Trypanosoma gambiense, Taenia solium )
- The hormone administered by doctors to a pregnant women to help in child birth during the time of natural delivery is -----  
(Estrogen, progesterone, Insulin, Relaxin)
- is the wind dispersal of fruits and seeds  
(Auto chory , Anemochory, Hydrochory, Zoochory)
- is a green house gas which causes climate change and global Warming.  
(Hydrogen , Oxygen, Nitrogen, Carbon- di -oxide).
- Dispersed phase + Dispersion Medium →  
(True solution, Colloidal solution, Suspension, Solution)
- In which solution, the diffusion of particles does not occur?  
( True solution, colloidal solution, Suspension, Water)
- $Zn + 2HCl \rightarrow ZnCl_2 + H_2 \uparrow$   
The above reaction is an example of \_\_\_\_\_  
(Combination reaction , Double displacement reaction , Displacement reaction, Decomposition reaction)
- The king of chemical is \_\_\_\_\_  
( Nitric acid, Sulphuric acid, Hydrochloric acid, Lactic acid)
- One light year is equal to \_\_\_\_\_  
( $365.25 \times 24 \times 60 \times 60 \times 3 \times 10^8 m$  ,  $1 \times 24 \times 60 \times 60 \times 3 \times 10^8 m$  ,  $360 \times 24 \times 60 \times 60 \times 3 \times 10^8 m$ )
- Chandrayaan –I operated for \_\_\_\_\_ days.  
( 520, 312 , 460, 412)
- Weight is measured using \_\_\_\_\_  
(physical balance, Spring balance)
- The potential difference required to pass a current 0.2A in a wire of resistance 40ohm is \_\_\_\_\_  
(100V, 8v, 0.08V, 80V)

G / 10 / Sci / 1



14. Kilo Watt- hour is the unit of \_\_\_\_\_

(Potential difference, electric power, electric energy, Charge)

15. \_\_\_\_\_ surface absorbs more heat than any other surface under identical conditions.

(White, Rough, black, Yellow)

**SECTION II - (Marks : 40)**

**Note : Answer any twenty questions.**

**20×2 = 40**

16. Sequentially arrange the different species of man from primitive to modern Man.

Neanderthal man, Homo habilis, Homo erectus, Homo sapiens

17. What do you mean by phenotype and genotype of an individual? Explain.

18. What are Monoclonal antibodies? Mention its use.

19. What are variations? Mention their types.

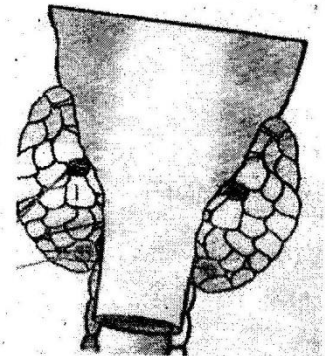
20. What is triple antigen? Name the three diseases which can be prevented by using it.

21. Name two diseases that are transmitted by house flies, mention their causative pathogens.

22. Differentiate between the diseases night blindness and colour blindness.

23. From the below diagram label the following parts

(Vocal cord, thyroid, para thyroid, Trachea).



24. Match the following with respect to dispersal of fruits/ seeds.

a) Autochory - Lotus

b) Anemochory - Xanthium

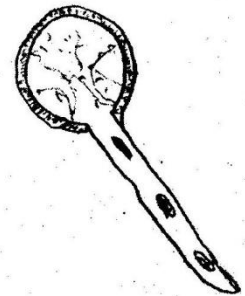
c) Hydrochory - Tridax

d) Zoochory - balsam

25. Differentiate dehiscent fruits and indehiscent fruits with suitable examples

26. Draw the given diagram and label the following parts

(Exine, Tube nucleus)



27. Classify the following into producers, consumers, decomposers.

i) butterfly

ii) grasshopper

iii) Calottes

iv) Snakes

v) Shoe flower

vi) Nitrobacteria

28. Living Organisms adapt themselves according to their habitat.

Match the following

Fish - wings

Camel - hard skin

Frog - fins

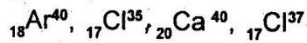
Birds - hind limbs with web

29. What is Henry's law?

30. What is Brownian movements?

31. What is tyndall effect?

32. From the given examples identify the isotopes and isobars.



33. 'Cl' represents chlorine atom 'Cl<sub>2</sub>' represents chlorine molecule. List out any two differences between atoms and molecules.

34. Identify the wrong statements and correct them.

a) The pH of acid is higher than 7

b) Acetic acid is used in aerated drinks.

35. The hydroxide ion concentration of a solution is  $1.0 \times 10^{-10} \text{M}$ . What is the pH of the solution?

36. Observe the given chemical change and answer the following.

Identify A and B



a) Write the commercial name of Calcium hydroxide

b) Identify products c and D when HCl is allowed to react with calcium oxide.

c) Write whether Calcium oxide is acidic or basic.

37. What are the differences between Mass and weight.

38. Match the following.

1. Force (F) -  $F \times d$

2. Momentum -  $\frac{GM}{R^2}$

3. Moment (T) -  $m \times a$

4. Gravity -  $m \times v$

39. Why does a spanner have a long handle?

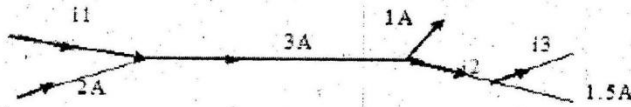
40. Why does a boxer always move along the direction of the punch of the opponent?

41. Write two principles that are used in rocket propulsion.

42. What is nuclear fission and nuclear fusion?

43. Fuse wire is made up of an alloy of \_\_\_\_\_ which has high resistance and \_\_\_\_\_ G / 10 / Sci / 3

44. The figure is a part of a closed circuit find the currents  $i_1$ ,  $i_2$  and  $i_3$



45. What are the limitations in harnessing wind energy?

**SECTION III - (Marks : 20)**

**Note :** (i) Answer any four questions by choosing one question from each part. **4x5 = 20**

(ii) Draw diagrams wherever necessary.

**PART - I**

46. What is immunity ? Write a note on the Various types of immunity.

47. Describe the structure of a neuron with the help of a neat , labeled diagram.

**PART - II**

48. i) Name the process by which a fruit is developed .

ii) Explain the development process in brief.

iii) Draw a neat , labeled a diagram of that process.

49. a) What is Global village?

b) What is the global electronic village?

**PART - III**

50. Calculate the number of moles in.

a)  $12.046 \times 10^{23}$  atoms of copper

b) 27.95 g of Iron

c)  $1.51 \times 10^{23}$  molecules of  $\text{Co}_2$

51. How will you establish the relation between Vapour density and Molecular mass of a gas by applying Avogadro law?

**PART - IV**

52. What are the application of cryogenes ?

53. A 5N Force acts on a 2.5 Kg mass at rest , making it accelerate in a straight line .

i) What is the acceleration of the mass?

ii) How long will it take to move the mass through 20 m?

iii) Find its velocity after 3 seconds.