SSLC Model Question Paper 2020-21

BIOLOGY

Std : X **Score : 40**

Time : 1 Hr and 30 mts

Instructions

a. The first 20 minutes is cool off time. Use this time to read and understand the questions clearly.
b. Answer as per the instructions and questions only.
c. Write answers on the basis of score and time.
d. From questions 1 to 36 maximum scores are 40.

(From question number 1 to 10 each one carries one score [1 x 10= 10])

Identify the odd one and write the common features of the others

1. Ethylene, Auxin, Cytokinin, Pheromones

2. breathing, vision, intelligence, hearing

3.

Observe the figure given below and answer the question.

a) Identify A, B.
b) Which is the pigment in A?

4.

Select the correct pair from the following.

Night blindness: The deficiency of Vitamin A

Colour Blindness - The excess pressure experienced in the eye.

Xerophthalmia- No vision in in dim light.

5.

Identify the word pair relationship and fill in the blanks:

i) Sensory nerve : Carries impulses to the spinal cord.
..... : Carries impulses from the brain to various parts of the body

ii) Skull : Brain
..... : Spinal cord

iii) Hypothalamus : Maintains homeostasis
..... : Control centre of involuntary actions.

v) Dendrite : Receives impulses
..... : Carries impulses outside

6.

Identify the word pair relationship and fill in the blanks.

a) Civet cat : .....;
Silkworm : Bombycol

b) Breaks opstored food : Gibberellins
helps in fruit ripending : .....

7.

Identify the figure and answer the following.
a) Name this micro organism.
b) Name the disease caused by this.

8.

Analyse the nitrogen bases given below and write the nitrogen base pairs found in DNA.

Thymine	Guanine	Uracil	Adenine	Cytosine

9.

Analyse the word pair relationship and fill in the blanks:

a) Restriction endonuclease : genetic scissors
..... : genetic glue

b) DNA profiling : Tests the arrangement of nucleotides
..... : Identifies the location of a gene in the DNA.

10. Which of these organic particles was formed during the Urey – Miller experiment?
(Protein, fatty acids, amino acids, glucose)

(From question number 11 to 22 each two carries one score [2 x 10= 20])

11.

Write the different types of nerves and their functions like the example given below.

A.Mixed nerve	Carries impulses to and from the brain and spinal cord.
B.....	.....
C.	.....

12.

Correct the errors if any in the following statements related to the sensation of taste and arrange them in correct order.

1. **Food particles dissolve in saliva.**
2. **Impulses reach the cerebrum.**
3. **Experiences the sense of taste.**
4. **Impulses form.**
5. **Chemo-receptors are stimulated.**

13.

Given in the table below is to growth hormone. Complete the table suitably.

Disease	Condition of Hormone	Symptoms
(a)	Deficiency of growth hormone during growth phase.	Stunted growth
Gigantism	(b)	Excessive growth of the body
Acromegaly	(c)	(d) .....

14.

Anjana gets wounded on her foot while playing with her friends. Due to continuous bleeding, her parents take her to the hospital. The doctor's diagnosis after thorough investigation, is given below.

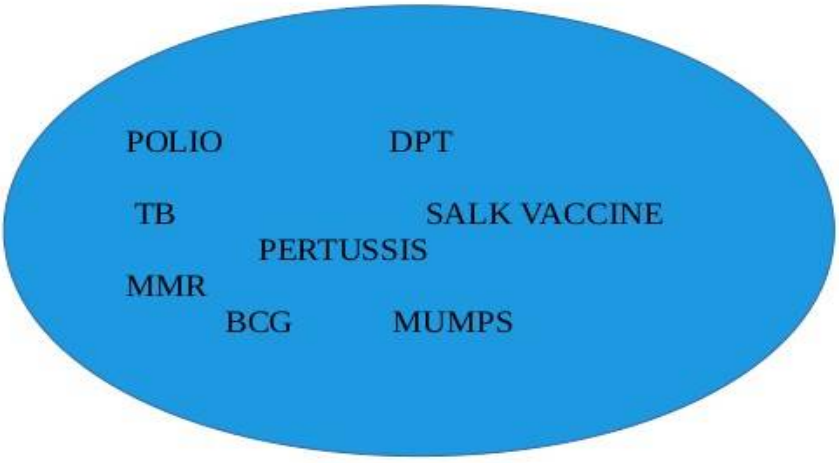
"This has happened as the blood is not clotting. This is a genetic disease."

a. What is Anjana's disease?

b. How can temporary relief be brought about for the disease?

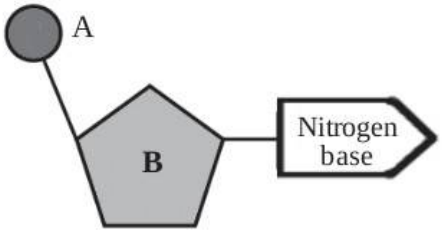
15.

. Some diseases and vaccines are given below. Make them Correct pairs.



16.

Analyse the illustration of a nucleotide molecule and answer the questions.



(a) Identify A and B in the illustration.
(b) "Nucleotides are found in DNA alone". What is your opinion regarding this statement? Substantiate.

17.

Who invented DNA finger printing? How does this technology help in detecting crimes?

18.

Rearrange the table in correct order

A	B
Oparin and Haldane	**Natural Selection**
Urey – Miller	**Evidence for Chemical evolution**
Charles Darwin	**Chemical evolution**

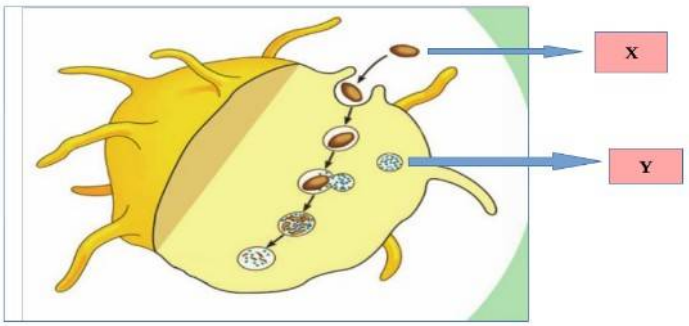
19.

Honey bees and termites live in colonies.

a) Name the chemical substance which helps them to live together.
b) Mention two uses of these chemical substances.

20.

Observe the illustration and answer the questions.



a) Which is the process illustrated?

b)What does X and Y indicate?

c) Name the white blood cells involved in this process?

21.

Enlist the demerits of antibiotics for Jose who is preparing for a seminar on the topic "The merits and demerits of Antibiotics."

22.

The possibility of occurrence of night blindness in Vitamin A deficient children is high. Based on this statement, answer the following questions.

a) How does the deficiency of vitamin A relate to night blindness?

b) Name any other disease caused by vitamin A deficiency.

(From question number 23 to 32 each two carries one score [3 x 10= 30])

23.

It is not necessary to detect blood groups if we can accept blood from anyone"
This was an argument put forward by Sivaprasad in a discussion on blood transfusion.

(a) What is the base of blood group determination?

(b) Can a person receive any blood from anyone ? Why?

24.

. The symptoms of a communicable disease are given below.

Loss of body weight, fatigue, persistent cough

(a) Name the disease?

(b) Identify the pathogen?

(c) How this disease is transmitted?

25.

The components and features of nucleic acid are given below. Analyse them and complete the table.

a) ribose sugar
b) double helical shape
c) uracil
d) one strand
e) deoxyribose sugar
f) thymine

DNA	RNA
•	•
•	•
•	•

26.

The following are the indications of some diseases affecting the nervous system. Examine them and complete the table by giving the disease name as headings..

- **Continuous and irregular flow of electric charges in the brain.**
- **Loss of body balance.**
- **Destruction of Ganglions.**
- **Loss of memory.**
- **Epilepsy due to continuous muscular contraction.**
- **Accumulation of an insoluble protein in the neural tissues.**

A.....	B.....	C.....
• Loss of body balanance. •	• •	• Continuous and irregular flow of •

27.

A table indicating primary level defense is given below. Arrange column B based on column A.

A	B
i. Skin	a) Wax
ii. Trachea	b) Hydrochloric acid
iii. Ear	c) Sebum
iv. Stomach	d) Cilia

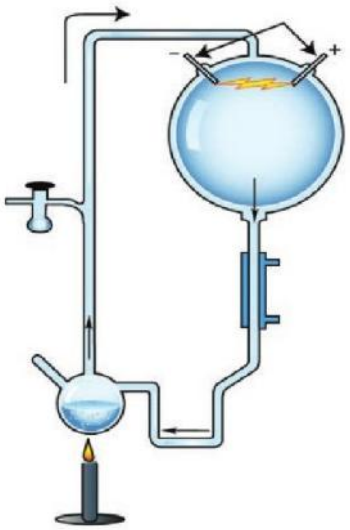
28.

Analyse the box given below and complete the table suitably.

civeton, glucagon, endolymph, bombycol
ethylene,calcitonin, auxin.

Hormone	Pheromone	Plant hormone

29.



a) Which theory of life does this experimental system indicate?
b) Who were the scientists who conducted this experiment?
c) What are the conclusions reached from this experiment?

30.

Using the following hints, prepare a flowchart showing the processes included in the sensation of smell.

a) Impulses reach the cerebrum through the gustatory nerve.

b) Smell particles dissolves in the mucus.

c) Gustatory receptors are stimulated.

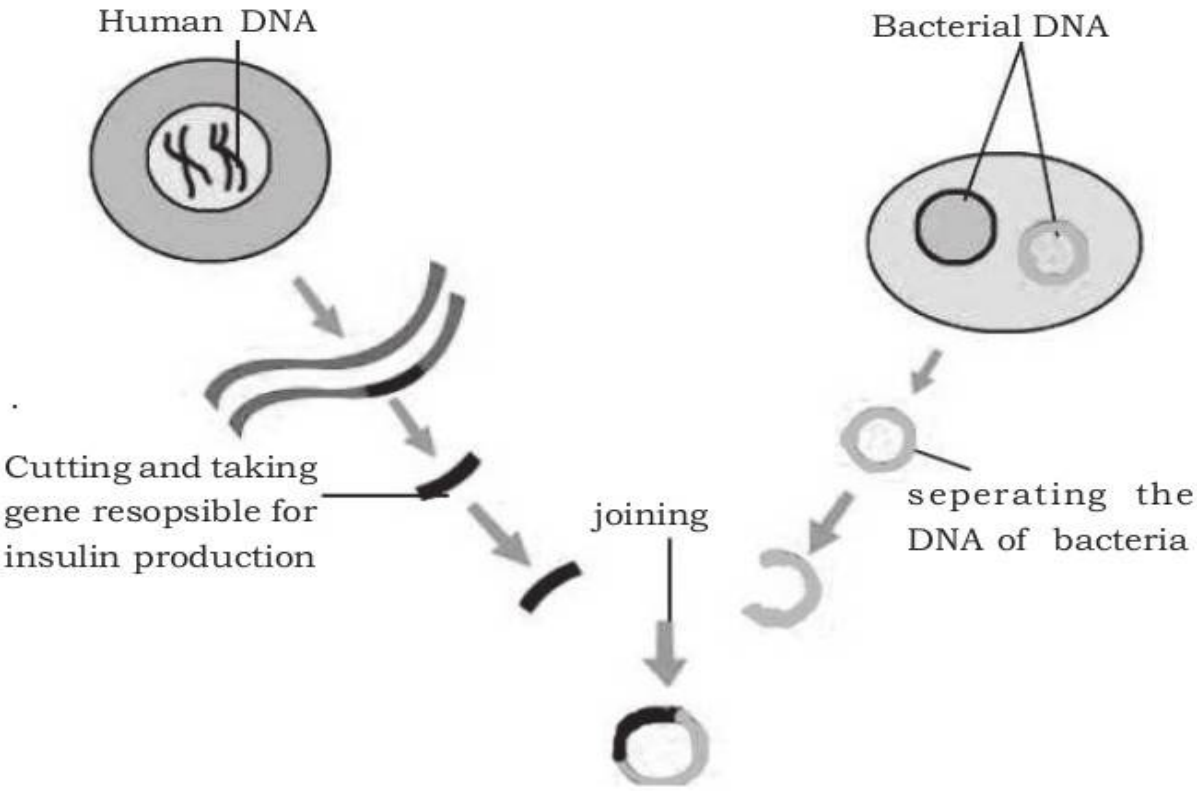
d) Smell particles dissolves in the air.

e) Reaches the nasal cavity through inspiration.

f) Form impulses.

31.

Analyse the stages in the production of bacteria those are capable of producing insulin and answer the following questions



a) Which is the enzyme used for cutting the gene responsible for insulin production ?

b) Which is the mechanism used for transfer of genes from one cell to another ?

c) Which is the enzyme used for joining gene responsible for insulin production with the DNA of the bacteria?

d) Name the technology referrred here.

32.

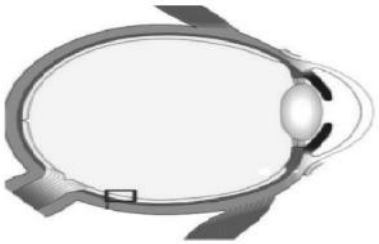
The following are the main ideas in the theory of evolution formulated by Charles Darwin. Write them down in the appropriate order.

*** Accumulation of vatiations inherited through generations.**
*** Favourable variations are transferred to the next generation.**
*** Struggle for existence.**
*** Those with favourable variations survive and others destroyed.**
*** Origin of new spevies**
*** Over production**

(From question number 33 to 36 each two carries one score [4 x 4= 16])

33.

Copy the following figure and label the parts based on the hints.



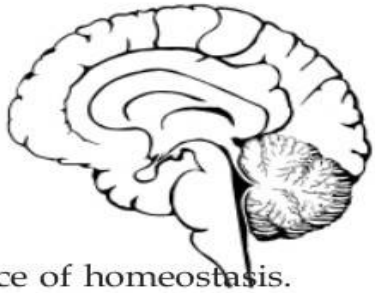
a) Part where photoreceptors are seen.

b) The opening of the eye in the middle of the iris.

c) The part that focuses light rays in the retina.

34.

Draw the diagram and label the following parts.



a) The part that helps in the maintenance of homeostasis.

b) That acts as relay station of impulses to and from the cerebrum.

c) The second largest part of the brain.

35.

Draw the diagram and label the following parts.

a) The part which secretes acetylcholine.

b) The part which receives impulses from the adjacent neuron.

c) The part which carries impulses from the cell body to outside.

36.

The table given below indicates blood groups.

Blood group	Antigen	Antibody
A	(i)	b
B	B	(ii)
(iii)	A, B	(iv) .....
..... (v)	..... (vi)	a, b

Analyse the blood groups and answer the questions

AB+ve, AB-ve, B+ve, A+ve, O-ve

a) Choose the blood group which contain "Rh" factor and antibody "a".

b) Choose the blood group in which Rh factors is absent and two types of antibodies are present.