KSTA MALAPPURAM
SSLC SAMPLE QUESTION PAPER 2020-21

Time: $1^1/_2$ Hours **BIOLOGY** Maximum Score: 40

Instructions

- 20 minutes is given as 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 time while answering the questions.
- The maximum score for questions 1 to 36 will be 40.

1 score for each question from 1 to 10.

1. Analyse the illustration and identify the nerve which is marked as X. 1

Different parts of body —— **X** ——▶ **Brain**

2. Identify the pigment present in the given photoreceptor cell. 1

3. Dysfunction of which endocrine gland is indicated by the following conditions? 1
   - Gigantism
   - Dwarfism

4. Analyse the following illustration and identify the hormone. 1

Pancreas → a)…… → Blood glucose level increases.

5. Fill the blank according to the model given. 1

Tuberculosis - Bacterium
Malaria - ……

6. Identify the one which is present only in RNA 1

a) Adenine b) Thymine c) Uracil d) Cytosine

7. Identify the odd one and write the common about the others. 1

a) AIDS b) Haemophilia c) Malaria d) Tuberculosis

8. If there is any mistake in the underlined part of the given statements, correct it. 1

a) ***Sebum*** makes the skin oily and water proof.

b) The protein called ***cuticle*** prevents the entry of germs through the skin.

c) The disinfectants present in the ***sweat*** destroys the germs.

9. The vector used for insulin production through genetic engineering is: 1

a) Restriction endonuclease b) Plasmid c) Ligase d) tRNA

10. Chemical evolution theory introduced by? 1

a) Urey - Miller b) Oparin - Haldane c) Darwin d) Lamarck

2 scores for each question from 11 to 22.

11. Complete the table using the data given in the box. 2

Abscisic acid , Auxin , Gibberellin , Ethylene

Function	Plant hormone
a) Dormancy of embryo	i).....
b) Ripening of leaves and fruits	ii).....
c) Sprouting of leaves	iii).....
d) Fruit formation.	iv).....

12. Given below are the different stages of experiencing smell. Analyse and arrange them in the correct order. 2

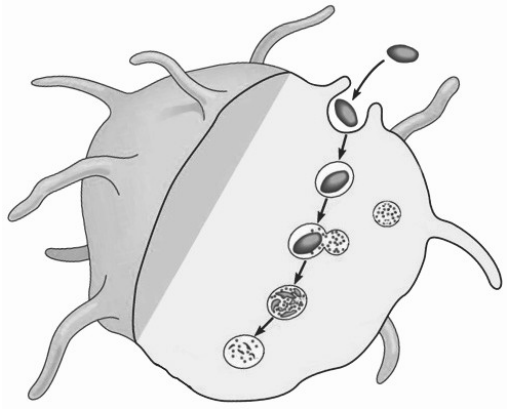
Generate impulses , Aromatic particles dissolve in the mucus inside the nostrils , Olfactory nerve carries impulses to the brain, Stimulate the olfactory receptors

Aromatic particles diffuse in the air and enter the nostrils → (a) → (b) → (c) → (d) → Experience smell.

13. Given below is a table related to neuron . Fill up suitably. 2

Parts	Function
i)	Part that receives mpulses from adjacent neuron.
Dendron	(ii) ..... .
iii)	Carries impulses from the cell body to outside.
v)	Secretes neurotransmitter.

14. Observe the given illustration and answer the following questions.



a). Which is the process indicated in the illustration? 1

b). Which are the white blood cells involved in the process? 1

15. “Lost child found after years. The child was identified through DNA testing."

a) What is the basis of this technology? 1

b) Write down the other two benefits of this technology. 1

16. Using the following statements, prepare a flow chart of phagocytosis. 2

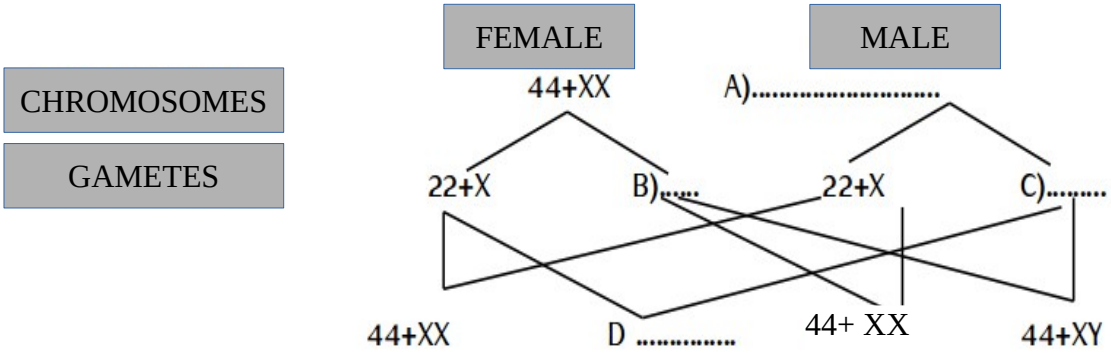
- The pathogens are degenerated and destroyed by the enzymes in lysosome.
- Phagocyte reach near pathogen.
- Engulfs pathogen in the membrane sac.
- Lysosome combines with membrane sac.

17. Make suitable pairs from the information given in the following box as **Disease - Vaccine.** 2

M.M.R, Tetanus, B.C.G, Polio, AIDS, Tuberculosis, T.T, Mumps, O.P.V.

18. Evaluate the statement given below and give a suitable explanation. 2
"Everyone cannot receive blood from all blood groups."

19. Complete the illustration regarding the sex determination in human suitably. 2



20. Analyse the symptoms of a disease given and answer the questions.

Loss of body balance, irregular movement of muscles, shivering of the body

a) Identify the disease. 1
b) Describe the cause of the disease. 1

21. Ants moving in a line along a particular trail .The reason behind this movement is the production of certain chemical substances

a) Identify these chemical substances. 1
b) Write down their other two functions. 1

22. Protein molecule is synthesized by the combined activities of different kinds of RNA molecules.

a) Which RNA is formed from DNA in this process? What is its function? 1
b) Which RNA is part of the cell organelle that synthesise the protein? 1

3 scores for each question from 23 to 32

23. The following are the main points of the theory of evolution by Charles Darwin. Write them down in the appropriate order. 3

a). Accumulation of variations inherited through generations.
b). Favourable variations are transferred to the next generation.
c). Struggle for existence.
d). Survival of favourable variations and the others destroyed.
e). Origin of new species.
f). Over production.

24.Complete the table suitably. 3

Eye diseases	**Reason**	**Remedy**
Night blindness	a	b
c	Prolonged deficiency of Vitamin A	d
e	f	Cannot distinguish green and red colours

25. The normal levels of the two components in human blood are given in the table. Analyse them and answer the questions.

X	9-11 mg/100ml
Y	70-110 mg/100ml

a) What are the components indicated by **X** and **Y**? 1

b) How can the level of **Y** be maintained without increase? 2

26. Give reasons for each of the statements given below.

a) Smell can be detected only in the presence of mucus. 1

b) People with color blindness cannot distinguish between red and green. 1

c) There is no vision in blind spot. 1

27. Make a note of the cancer by including the given indicators

- Cause of the disease. 1
- Treatment. 1
- Importance of early detection of the disease. 1

28. Hemophilia is caused by the defect in the production of proteins that help the blood to clot.
    a) What are the symptoms of this disease? 1
    b) There is no complete cure for this disease. Why? 1
    c) How is a temporary cure for this disease possible? 1

29. Analyze the statements given and write answers to the questions.

Fever is a condition when the body temperature rises above the normal level. Fever is a defense mechanism of the body

a). What is the normal body temperature? 1
b). How does the body temperature rise when germs enter the body? 1
c). How does fever become a defense mechanism? 1

30. Analyse the blood groups given in the box and answer the following questions.

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

a) Blood group with "Rh" factor, antigen "A" and antibody "b". 1
b) Blood group with A, B antigens and without "Rh" factor. 1
c) Blood group with no antigens. 1

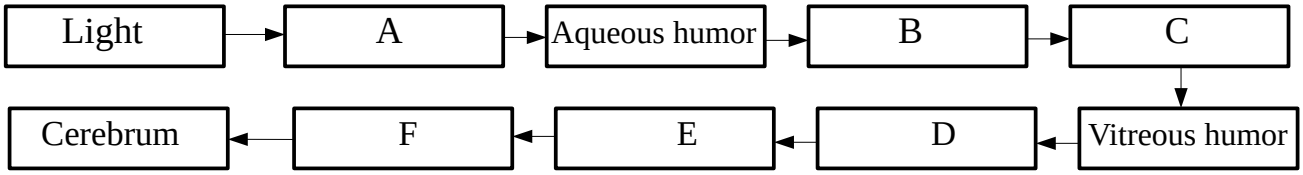
31. Some of the features of nucleic acids and their constituents are given below. Arrange them in the table suitably. 3

Ribose sugar, Double stranded, Thymine. Uracil , Deoxyribose sugar. single strand

DNA	RNA
•	•
•	•
•	•

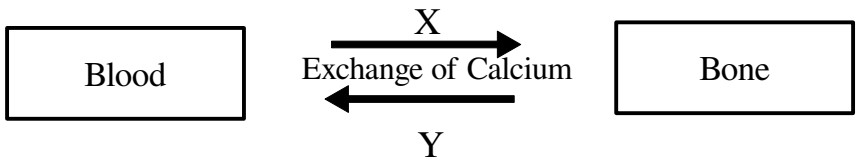
32. Complete the flowchart related to vision by including the information provided in the box. 3

Iris, retina, impulse, cornea, pupil, cerebrum, lens, optic nerve.



4 scores for each question from 33 to 36.

33. The function of regulating the level of calcium in the blood is illustrated. Analyse it and answer the following questions.



a) Which hormone is indicated by 'X'? 1

b) Which gland produces the hormone indicated as 'Y'? 1

c) Write down the other functions of these hormones to regulate the level of calcium in blood. 2

34. "**It is not advisable to use antibiotics without the recommendation by a doctor."**

a). What are antibiotics? 1

b). Are antibiotics effective against all communicable diseases ? Why? 1

c). Mention the side effects of egular use of Antibiotics ? 2

35. Analyse the given table and arrange columns B and C according to column A. 4

A- Parts	B- Peculiarity	C- Function
Pupil	Made up of connective tissues.	The point of maximum visual clarity.
Yellow spot	The aperture seen at the centre of the iris.	Refracts light rays to focus on the retina.
Cornea	Plenty of photoreceptors are present.	Increases and decreases the size depending on the intensity of light.
Sclera	The projected transparent anterior part of the sclera.	Gives firmness to the eye.

36. Redraw the diagram, identify and label the parts with their names. (For Drawing - 1)

a). Coordinates muscular activities. 1

b). Controls voluntary movements. 1

c). Controls involuntary actions like heart beat, breathing etc. 1