

Standard : X

BIOLOGYTime : 1 ½ Hours
Score : 40**Instructions :**

- The first 15 minutes is the cool off time. You may use the time to read the questions and plan your answers.
- Answer only on the basis of instructions and questions given.
- Consider score and time while answering.

Answer any five from questions 1 to 6. Each carries one score. [5x1=5]

1. Observe the word relation and fill up.
 Retina : Photoreceptors :: Basillar membrane :
2. Which among the following is not related to inflammatory response?
 - Phagocytes
 - Eosinophil
 - Monocytes
 - Red blood cells
3. Observe the illustration of virus and answer the question.



What do X and Y indicate?

4. Correct mistakes if any, in the underlined part.
 - a. Anthrax is caused by fungus. *bacteria*
 - b. The causative organism of diphtheria is bacteria.
 - c. Bud rot of coconut is caused by virus. *fungus*
5. Synthesis of the protein that imparts colour to human skin is controlled by different forms of a gene.
 - a. Which is the protein mentioned above?
 - b. What is the term used to indicate different forms of a gene?
6. Complete the flow chart as per the model given.

Model : Filarial worm → culex mosquito → man → filariasis

.....(i)..... → Anopheles mosquito → man → (ii)

Answer any six from questions 7 to 13. Each carries 2 score. [6x2=12]

7. How does the cell wall help in the defense of diseases in plants?
8. Rearrange the column B in accordance with column A.

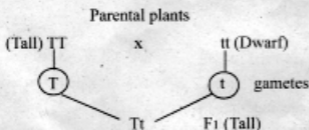
A	B
Neutrophil	Destroys cancer cells.
Basophil	Engulfs pathogens.
B Lymphocyte	Helps in oxygen transport.
T Lymphocyte	Produces antibodies.
	Dialates blood vessels.

9. An experiment conducted by Edward Jenner is given below. Read it and answer the questions.

'He injected the pus taken from a cow pox patient into the body of an 8 year old boy. After two months the pus taken from a small pox patient was injected into the boy'.

- What was the aim of this experiment? What was its result?
- What was his contribution to the society by this experiment?

10. Observe the illustration of hybridisation and answer the questions.



- All the plants in F₁ are tall. Why?
 - Mention the alleles of the gene responsible for the trait height.
11. Analyse the illustration and answer the questions.



- Which disease is indicated in the illustration? What is the reason for the change in shape of red blood cells?
- How does this affect our body?

12. Analyse the given hint and answer the questions.

“ The production of this hormone is high at night and low during the day.”

- Which is the hormone? Name the gland that secretes this hormone.
- Write one function of this hormone.

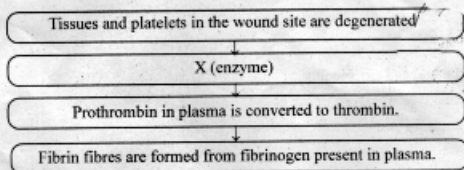
13. Observe the figure and answer the questions.



- Identify the parts indicated as A, B.
- How do the movement of fluids in these parts help in maintaining body balance?

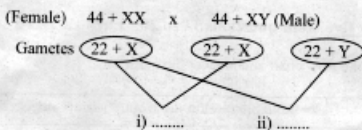
Answer **any five** from questions 14 to 20. Each carries 3 score. [5x3=15]

14. Analyse the flow chart and answer the questions.



- Which enzyme is indicated as X?
 - Which vitamin is needed for the conversion of prothrombin to thrombin?
 - How is blood clot formed by this process?
15. Two statements from a science article are given below. Analyse them and answer the questions.
- Blood groups are classified into positive and negative.
 - Nobody can receive blood from all blood groups.
- Write reasons for each.
 - What are the things to be taken care of during blood transfusion?
16. Write correct explanation for the given statements.
- Do not use antibiotics without the recommendation of a doctor.
 - Skin is a safety shield.

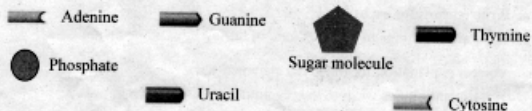
17. Analyse the given hints related to a particular disease and answer the questions.
- Mainly affects the lungs.
 - Can be prevented through vaccination.
 - The pathogens spread through air.
- Which is the disease mentioned? Name the bacteria that causes this disease.
 - Which is the vaccine that prevents this disease?
 - What are the major symptoms of this disease?
18. Suggest any six important points to be included in an awareness programme for the people who are against admitting an HIV infected student in the school.
19. Observe the illustration related to sex determination in man and answer the questions.



- Fill up (i) and (ii) suitably.
 - Which type of chromosome does the number 44 indicate?
 - What is the genetic mechanism that determines whether a child is male or female?
20. Explain how the following processes cause variation in organisms.
- Crossing over in chromosomes.
 - Fertilization.
 - Mutation.

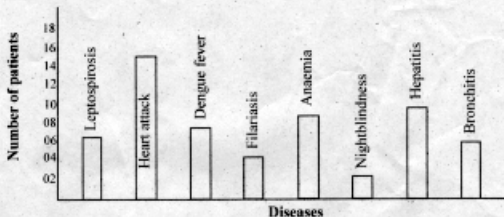
Answer any two questions from 21 to 23. Each carries 4 score. [2x4=8]

21. Analyse the illustration and answer the questions.



- Which are the nitrogen base pairs seen in DNA?
- Illustrate a nucleotide present **only in RNA**.
- Write two differences between DNA and RNA.

22. Analyse the graph showing the data of patients living in an unhealthy locality and answer the questions.



- Which communicable disease has affected most of the people?
- Which are the diseases caused by deficiency of nutrients?
- Which is the bacterial disease?
- Which are the diseases that can be controlled by observing Dry day?
- Suggest two changes that has to be made in our life style to avoid the diseases Heart attack and Bronchitis.

23. Redraw the diagram of brain. Identify the parts that perform the following functions, name and label them.



- Coordinates muscular activities and maintains equilibrium of the body.
- Controls heartbeat, breathing etc.
- Plays a major role in the maintenance of homeostasis.