

*Answers to this Paper must be written on the paper provided separately. You will not be allowed to write during the first 15 minutes. This time is to be spent in reading the question paper. The time given at the head of this Paper is the time allowed for writing the answers.*

*Section A is compulsory. Attempt any four questions from Section B. The intended marks for questions or parts of questions are given in brackets.*

**SECTION A (40 Marks)**  
**(Attempt all questions from this section)**

**I. Choose the correct option.**

[15]

1. Antibody is a blood serum protein produced in response to:

- (i) Antitoxins  
(ii) Antibiotics  
(iii) Antigens  
(iv) Antiseptics

2. Which of the following is not a nutritional deficiency disease?

- (i) Night blindness  
(ii) Beri-Beri  
(iii) Thalassemia  
(iv) Kwashiorkor

3. The protozoan that causes malaria is:

- (i) Entamoeba histolytica  
(ii) Euglena  
(iii) Paramecium  
(iv) Plasmodium

4. The muscular sheet which separates the thoracic and abdominal chamber of the human body is:

- (i) Peritoneum  
(ii) Diaphragm  
(iii) Parietal pleura  
(iv) Visceral pleura

5. The activity of the mammary gland is related to which reproductive hormone:

- (i) Progesterone  
(ii) Prolactin  
(iii) Oestrogen  
(iv) Testosterone

6. Bone cells are technically termed as:

- (i) Myocytes  
(ii) Chondrocytes  
(iii) Leucocytes  
(iv) Osteocytes

7. The process of conversion of excess glucose into glycogen is termed as:

- (i) Glycolysis  
(ii) Glycogenesis  
(iii) Glycogenolysis  
(iv) Defaecation

8. The disease caused due to the deficiency of Thiamine is:

- (i) Osteomalacia  
(ii) Beri-Beri  
(iii) Rickets  
(iv) Dermatitis

9. Ascorbic acid is Vitamin:

- (i) C  
(ii) D  
(iii) B  
(iv) A

10. Which of the following is a catabolic process?

- (i) Photosynthesis  
 (ii) Respiration  
 (iii) Both (a) and (b)  
 (iv) None of these

11. Fat soluble vitamins are:

- (i) A, D and E  
 (ii) B, C and D  
 (iii) B, D and E  
 (iv) A, B and C

12. Gastric juice contains:

- (i) HCl and Pepsin  
 (ii) Pepsin and Trypsin  
 (iii) Trypsin and HCl  
 (iv) Amylopsin and Pepsin

13. Floral stalk is technically is termed as :

- (i) Petiole  
 (ii) Peduncle  
 (iii) Pedicel  
 (iv) Funicle

14. **Assertion:** Melanin is responsible for skin colour.

**Reason:** It is produced by osteocytes.

- i) Both A and R are true.  
 (ii) Both A and R are false  
 (iii) A is true and R is false.  
 (iv) A is false and R is true.

15. **Assertion:** The liver plays an important role in digestion by producing bile.

**Reason:** Bile helps in emulsification of fat.

- i) Both A and R are true.  
 (ii) Both A and R are false  
 (iii) A is true and R is false.  
 (iv) A is false and R is true.

**II. Fill in the blanks:**

[5]

- \_\_\_\_\_ is plastid which stores starch.
- The popular name of disease filariasis \_\_\_\_\_
- \_\_\_\_\_ protects the lungs from mechanical injuries.
- \_\_\_\_\_ gland open on the margins of the eyelids.
- \_\_\_\_\_ joint allow movements in all direction.

**III. Name these.**

[5]

- Arrangement of flowers on a twig/stem.
- A common phase in both aerobic and anaerobic respiration
- Two main layer of skin proper
- Two muscles helps in breathing
- Disease caused due to inflammation in liver.

**IV. Match the column:**

[5]

Column A	Column B
1. Allergy	1. Leukemia
2. Alveoli	2. Immovable
3. Integument	3. Phylloquinone
4. Vitamin K	4. Diffusion of gases
5. Bones of brain box	5. Ascorbic acid
	6. Lined with hair
	7. Testa
	8. Hay fever

[5]

V. Correct the following false statements by changing first/last word only.

1. Germination is the period of rest in a seed.
2. Iron is required for the proper working of thyroid.
3. Antiseptics are the protein that belong to the class immunoglobulin.
4. Haemophilia is a kind of allergy.
5. The treatment of diseases by the use of chemical substances is known as allopathy.

VI. The first pair indicates the kind of relationship that exists between the first two terms. Rewrite and complete the second pair on similar basis [5]

1. Humerus : Glenoid cavity :: Femur : \_\_\_\_\_
2. Alveoli : Gaseous exchange :: Mitochondria : \_\_\_\_\_
3. Hepatitis : Liver :: Tuberculosis : \_\_\_\_\_
4. Green petals : Sepaloid :: Coloured Sepals : \_\_\_\_\_
5. Brain : Cranium :: Spinal cord : \_\_\_\_\_

### SECTION B (40 Marks)

(Attempt any four questions from this sections)

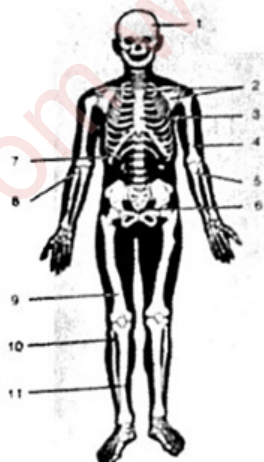
VII. a) What is dental formula of a normal human adult? [1]

b) Differentiate between vaccination and sterilization. [2]

c) "Abnormally large number of WBCs in the blood are usually an indicator of some infection in our body". Comment on the statement [2]

d) Write four important preventive measures advised by WHO to minimize the chances of getting COVID-19. [2]

e) Given below is a diagram of a human skeleton. Name the bones numbered 1 to 11. [3]



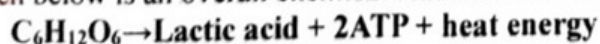
\* VIII. a) Define: Prophylaxis. [1]

b) Why do you shiver and why do your teeth chatter when it is very cold in winters? [2]

c) Distinguish between Leukoderma/Vitiligo and Albinism. [2]

d) What is the difference between an organ and an organelle? [2]

e) Given below is an overall chemical reaction of a certain process: [3]



i. Name the process.

ii. Is this reaction applicable to animals or to plants or to both animals and plants?

iii. Name one tissue in which this reaction may occur.

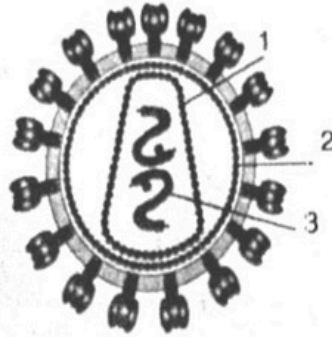
\* IX. a) Explain: Disinfectants. [1]

b) Write the important role of Melanin. [2]

c) What are the uses of skeleton in our body? [2]

d) Small intestine is the most important organ of the digestive system why? [2]

e) The diagram given below represents a kind of microorganism. Study the same and answer the following questions. [3]



a) Identify the microorganism.

b) Label the guideline 1, 2 and 3

c) Does it cause any disease? If yes, mention the name.

\* X. a) Give two examples of viviparous plant. [1]

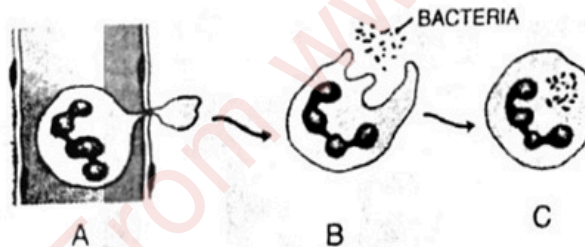
b) List the merits of local defence system. [2]

c) Write the important roles of the following food components in our body. [2]

i. Cellulose                      ii. Proteins

d) Define piloerection. [2]

e) The figures (A, B, and C) given below represent a kind of protective method in our body. Study the same and answer the following questions. [3]



i. Name and define the process in figure A

ii. What kind of blood cell is shown in the figures? Write its technical name also.

iii. Name and define the process occurring in figure B.

\* XI. a) Define Asphyxiation. [1]

b) Write the different ways by which the housefly contaminates our food. [2]

c) Write short note on Emasculation. [2]

d) Differentiate between respiration and breathing. [2]

e) Explain the term "Vasodilation" and "Vasoconstriction". How do these process contribute in the regulation of the body temperature. [3]

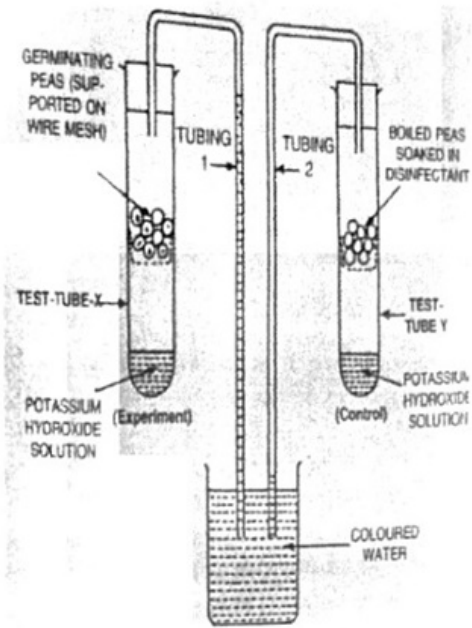
\* XII. a) Define: Antagonistic muscles [1]

b) Why is it usually difficult to demonstrate respiration in green plants? [2]

c) Differentiate between active immunity and passive immunity. [2]

d) What is roughage? Give two examples. [2]

e) The following diagram refers to an apparatus which used to demonstrate the physiological process: [3]



- i. What is the purpose of keeping potassium hydroxide solution in the test tubes X and Y?
- ii. What is the purpose of keeping boiled seed soaked in a disinfectant in test tube Y?
- iii. Why has the coloured water risen in tubing 1.