

Answers to this Paper must be written on the paper provided separately. You will not be allowed to write during 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 [].

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**SECTION A - 40 MARKS**

(Attempt all questions from this Section.)

**Question 1**

Choose the correct answers to the questions from the given options.

[15]

(Do not copy the question, write the correct answers only.)

- (i) A smell of good food causes watering of your mouth. What is it?  
(a) Natural reflex (b) Acquired reflex (c) Inborn reflex (d) Ordinary reflex
- (ii) Which of the following is a communicable disease?  
(a) Measles (b) Cancer (c) Heart attack (d) Allergy
- (iii) The father of vaccination:  
(a) Charles Darwin (b) Alexander Flemming (c) Issac Newton (d) Edward Jenner
- (iv) Tusser is a variety of:  
(a) Wool (b) Silk (c) Cotton (d) Synthetic fibre
- (v) The disease-causing bacteria, viruses and protozoa are called:  
(a) Pathogens (b) Vectors (c) Both of them (d) None of them
- (vi) The seat of memory and intelligence:  
(a) Cerebrum (b) Medulla blongata (c) Pons (d) Cerebellum
- (vii) Blood vessels with valves:  
(a) Arteries (b) Veins (c) Capillaries (d) Arterioles
- (viii) Which of the heart chamber has the thickest muscular wall?  
(a) Left ventricle (b) Right ventricle (c) Right auricle (d) Left auricle
- (ix) Which one of the following is a male sex hormone?  
(a) Adrenaline (b) Oestrogen (c) Progesterone (d) Testosterone
- (x) The onset of sexual maturity is known as:  
(a) Childhood (b) Puberty (c) Pre-adolescence (d) Post adolescence
- (xi) The blood vessel that carry oxygenated blood to the heart :  
(a) Renal Vein (b) Pulmonary Vein (c) Aorta (d) Pulmonary artery
- (xii) The long thread like locomotory organ of bacteria:  
(a) Cilia (b) Flagella (c) Pseudopodia (d) Both (a) & (b)

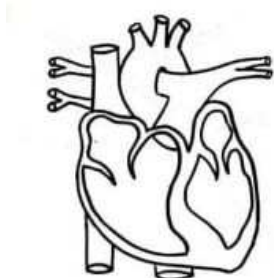
- (xiii) Which is a **true** statement about spinal nerves?
- All spinal nerves carry only motor information.
  - All spinal nerves are mixed.
  - All spinal nerves carry only sensory information.
  - Some are sensory and some are motor in function.
- (xiv) Study the diagram given below and mention to which category they belong?



- Algae
  - Virus
  - Fungi
  - None of these
- (xv) Given below are two statements marked Assertion and Reason. Read both the statements carefully and choose the correct option:
- Assertion(A):** Organic farming is very beneficial for farmers to increase crop production.
- Reason(R):** It uses organic manure and other biological materials to enhance soil fertility .
- A is True and R is False
  - A is False and R is True
  - Both A and R are True
  - Both A and R are False

## Question 2

- (i) Name the following: [5]
- The body fluid that consists of 94% water and exclusively contains leukocytes.
  - The blood vessel that distributes oxygenated blood to the walls of the heart.
  - The nerve with both sensory and motor neurons.
  - Blood group which is considered as the Universal recipient.
  - The science that deals with the study of micro-organisms.
- (ii) Define the following: [5]
- Vector
  - Involuntary actions
  - Vaccination
  - Horticulture
  - Aquaculture
- (iii) Given below is the structure of human heart. Read the information given below the diagram and fill in the blanks: [5]



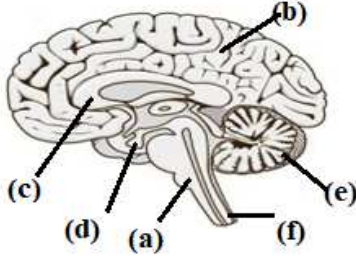
Internally, the heart is divided vertically into left and right portion by a (a)----.Each half is further divided horizontally into two chambers. The (b)----- are the 'receiving chambers' and (c)----- are the 'distributing chambers'.The heart is a muscular organ made up of specialised muscles called (d)-----..The contraction of the muscle is the result of an electrical impulse which originates in a node called the (e)-----.

- (iv) Arrange and rewrite the terms in each group in the correct order so as to be in a logical sequence beginning with the term that is underlined: [5]

- (a) Ripening, Removal of moisture, Salting, Curdling of milk  
 (b) Stimulus, Effector, Receptor, Spinal cord  
 (c) Right Ventricle, Pulmonary veins, Lungs, Pulmonary artery  
 (d) FSH, Ovary, Pituitary, Oestrogen  
 (e) Silk, Cocoons, Boiling water, Pupa

- (v) Given below is a cross section of the human brain. Match the structures marked (a) to (e) with their correct functions: [5]

Example : (f) – 6. Lowest part of CNS

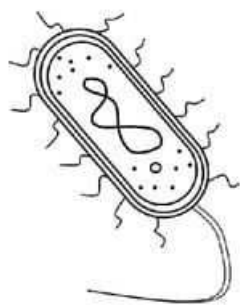
Cross section of Human Brain	Functions
	<ol style="list-style-type: none"> <li>1. Controls all other glands.</li> <li>2. Connects the hemispheres of the largest part of the brain.</li> <li>3. Controls peristalsis.</li> <li>4. The part of the brain with increased surface area.</li> <li>5. Affects the balance of the body by the consumption of alcohol.</li> <li>6. Lowest part of the CNS.</li> </ol>

## SECTION B - 40 MARKS

(Attempt **any four** questions from this section)

### Question 3

- (i) Give the contribution of Karl Landsteiner. [1]  
 (ii) Explain the term synapse with diagrammatic representation. [2]  
 (iii) Mention any four ways to keep your heart healthy. [2]  
 (iv) Answer the following: [2]  
 (a) Name any two diseases spread by mosquitoes.  
 (b) Write any two advantages of including curd in your diet.  
 (v) Study the diagram given below and answer the following questions: [3]



- (a) Identify and name the structure given above.
- (b) Redraw the structure and label the following parts:  
(1) Capsule (2) Cilia (3) Cell membrane (4) Chromatin fibres
- (c) Mention the function of (1) and (2).
- (d) Write the different categories of (a) based on the shape.

#### Question 4

- (i) Expand AIDS. [1]
- (ii) Write any two examples for conditioned reflexes. How is it different from simple reflex? [2]
- (iii) Explain double circulation with the help of a flow chart. [2]
- (iv) Expand CSF and mention its function. What do you mean by foramen magnum? [2]
- (v) The diagram given below represents an economically useful process. [3]



- (a) Identify it and give the scientific term of the process.
- (b) Name the scientific name of the organism that is reared in (a).
- (c) Name the product obtained by this process and give its uses.
- (d) Where are these organisms reared?

#### Question 5

- (i) Who is considered as the 'Father of White Revolution'? [1]
- (ii) Why are fungi classified separately from plants? Provide two key reasons for this distinction. [2]
- (iii) Give reasons for the following: [2]
  - (a) Any injury to the base of the brain can lead to sudden death.
  - (b) When curd is made traditionally, a small amount of the previous batch of curd is added.
- (iv) Give the exact location of the following: [2]

(a) Bicuspid valve (b) Pacemaker

(v) Draw a neat labelled diagram of the basic unit of the nervous system. [3]

### Question 6

(i) What are saprophytes? Give an example. [1]

(ii) Differentiate between the following pairs of terms on the basis of what is indicated within the brackets: [2]

(a) Cranial and spinal nerves (Number in pairs)

(b) Health and disease (Definition)

(iii) Name the microorganism which is used in the baking industry. How does it contribute to the soft texture of bread? [2]

(iv) Answer the following questions: [2]

(a) Give two examples of non-communicable diseases.

(b) Differentiate between Kharif crops and Rabi crops.

(v) Study the picture given below and answer the following questions: [3]



(a) Name the person shown in the picture who is considered as the 'Father of Green Revolution'.

(b) Give an account of the various technologies that have contributed to the increased production of crops.

(c) Expand HYV.

### Question 7

(i) What are milch animals? Give an example. [1]

(ii) Answer the following questions: [2]

(a) Name any two nitrogen fixing bacteria.

(b) Why it is recommended to cover your mouth using handkerchief while sneezing and coughing?

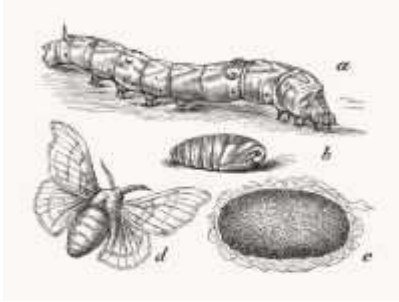
(iii) Name the common bacteria present in curd and give its scientific name. [2]

(iv) A hospital receives an emergency case where a patient with blood group B needs an immediate blood transfusion. The blood bank has the following available blood types: A, B, AB, O. Which blood type(s) can be used for transfusion? Justify the answer based on the ABO blood group system. [2]

- (v) Schematically explain a simple reflex arc. [3]

### Question 8

- (i) Observe the relation between the first two words and then fill in the fourth word. [1]  
Heart : Pericardium :: Brain : -----.
- (ii) Enlist any four physical changes that occur during adolescence. [2]
- (iii) Differentiate between arteries and veins. [2]
- (iv) Mention any two activities to reduce stress. [2]
- (v) Study the diagram given below and answer the following questions: [3]



- (a) Identify and define the biological process illustrated in the figure given above.
- (b) Name the product obtained.
- (c) What is reeling?
- (d) Why the process mentioned in (a) has been criticised by the environmentalists?

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