

Biology – Test Paper

[Time: $1\frac{1}{2}$ hrs]

[M. Marks : 80]

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 I is compulsory. Attempt any **four** questions from **Section II**.

Section I (40 Marks)

Attempt all questions from this section

Question 1.

- (a) Name the following :
- (i) The part of the brain where respiratory centre is located.
 - (ii) The gases which mainly contribute for causing acid rains.
 - (iii) Formation of plug-like structure at the injuries to prevent loss of blood.
 - (iv) The light induced reaction which leads to splitting of water.
 - (v) The condition which results in the abnormal long bones, long lower jaw bone due to hypersecretion of pituitary hormone.
- (b) State whether the following statements are true or false. If, false rewrite the correct statement by changing the first and last word only :
- (i) The act of giving birth is called Parturition.
 - (ii) Deafness is caused due to rupturing of the Pinna.
 - (iii) Transformation of cartilage into bones is called osteoporosis.
 - (iv) Watson and Crick showed the double helical structure of the molecule of RNA.
 - (v) Immigration is entry of additional persons into existing population of a country from outside.
- (c) Choose the odd one out from each of the following sets, giving the reason for your choice :
- (i) Diplococcus, Salmonella typhi, Plasmodium, Vibrio cholerae.
 - (ii) Adrenal, Liver, Thyroid, Pituitary.
 - (iii) Coughing, Sneezing, Eating, Blinking.
 - (iv) Corpus luteum, Corpus callosum, Pons, Cerebellum.
 - (v) AIDS, Small pox, Diphtheria, Measles.
- (d) Give one example of each of the following :
- (i) A mammal with gestation period of 280 days.
 - (ii) Tropic hormone.
 - (iii) An eye defect.
 - (iv) A pigment of the rods of eye.
 - (v) A Urinal disease.
- (e) Give one point differences between :
- (i) Endocrine and exocrine gland.
 - (ii) Medullated nerve fibre and non-medullated nerve fibre.
 - (iii) Lenticels and stomata.
 - (iv) Chloroplast and Leucoplast.
 - (v) Palisade cells and spongy cells.

- (f) During a street fight between two individuals mention the effects on the following organs by the autonomic nervous system, in the table given below :

S. No.	Organ	Sympathetic system	Parasympathetic system
1.	Heart		
2.	Pupil of the eye		
3.	Blood vessels		
4.	Breathing		
5.	Lungs		

- (g) Match the items given in Column A with the most appropriate ones in Column B and rewrite the correct matching pairs from Column A and Column B :

S. No.	Column A	Column B
1.	Pituitary gland	(a) Testosterone
2.	Sulphur dioxide	(b) Calcium
3.	Seminiferous tubules	(c) Growth hormone
4.	Clotting of blood	(d) Acid rain
5.	Guttation	(e) Sperms
		(f) Global warming
		(g) Magnesium
		(h) Hydathodes

- (h) Select the correct answer out of the four available choices given under each question. Rewrite the correct answer from i to v :

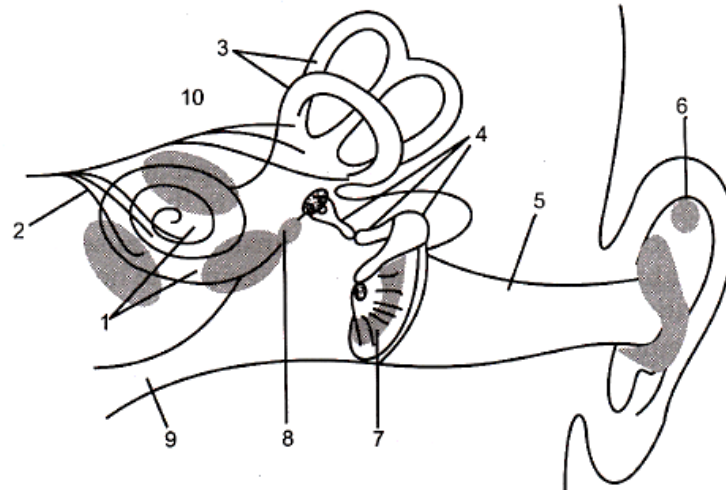
- (i) The chamber of heart that contains pure blood :
 - (a) Right auricle
 - (b) Left auricle
 - (c) Right ventricle
 - (d) Left ventricle
- (ii) Ear ossicles consists of :
 - (a) Hammer, anvil, stirrup
 - (b) Three semicircular canal.
 - (c) Scale vestibuli, scale media, scale.
 - (d) Bowman's capsule and uriniferous tubules
- (iii) Islets of Langerhans are :
 - (a) Ductless glands in pancreas
 - (b) Modified lymph glands
 - (c) Specialised areas in pituitary
 - (d) Small tubules in kidneys
- (iv) The 'Dark Reaction' in photosynthesis is called so because it :
 - (a) Can occur more rapidly at night
 - (b) Does not require light energy
 - (c) Cannot occur during day time
 - (d) Can occur only in shade
- (v) Vaccine is produced by introduction of dead germs :
 - (a) Weak germs
 - (b) Virulent germ
 - (c) None of the above items
 - (d) 25%

Section II (40 Marks)

Attempt any **four** questions from this section

Question 2.

(a) The following diagram refers to the ear of a mammal :



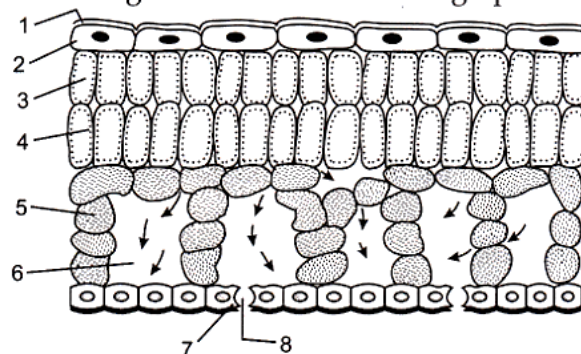
- (i) Label the parts 1 to 10.
- (ii) Which structure :
 - (1) Converts sound waves into mechanical vibrations ?
 - (2) Converts vibrations into nerve impulses ?
 - (3) Responds to change in position ?
 - (4) Transmits impulses to the brain ?
 - (5) Equalizes atmospheric pressure and pressure in the ear ?

(b) Account for the following facts :

- (i) Transpiration is the price paid for photosynthesis.
- (ii) It is necessary to maintain a normal osmotic concentration of blood.
- (iii) Our resources cannot keep pace with the rising population of the country.
- (iv) Older people tend to feel more cold than youngsters.
- (v) The full grown embryo respire and not breathes.

Question 3.

(a) The diagram represents a diagrammatic section through part of a leaf

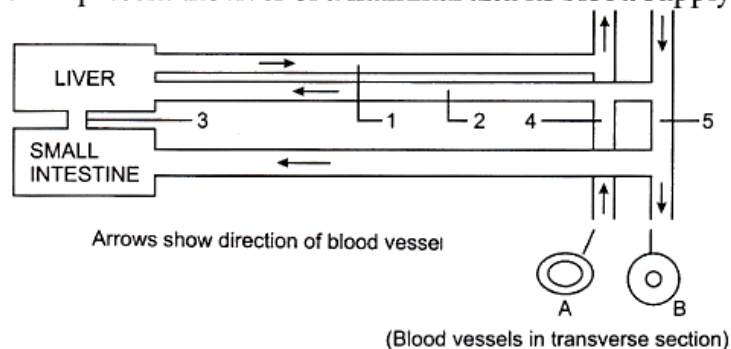


- (i) Label the parts numbered 1 to 8.
- (ii) State the role of part 4.
- (iii) Name the gases that are likely to diffuse in the direction of the arrow :
 - (a) During the day
 - (b) At night time.

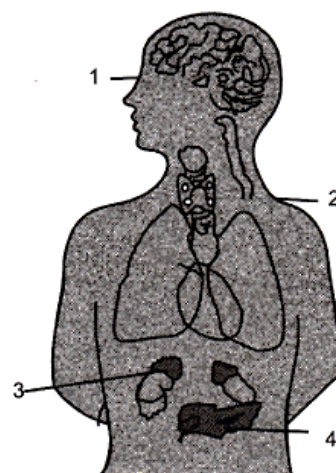
- (b) Define the following terms :
- | | | |
|--------------------------|----------------|-----------------|
| (i) Photophosphorylation | (ii) Diffusion | (iii) Antitoxin |
| (iv) Synapse | (v) IUD. | |

Question 4.

- (a) The figure below represent the liver of a mammal and its blood supply.



- (i) Name the blood vessels 1, 2, 3, 4 and 5.
- (ii) About 2 hours after a meal which blood vessel would be loaded with food material in solution ?
- (iii) Why does blood vessel 3 join small intestine to liver ?
- (iv) Why does blood vessel B has narrow lumen than blood vessel A ?
- (v) Name the three layers of which the wall of A and B is made up of ?
- (b) The diagram given below shows some of the endocrine glands in the human body. Observe the figure and answer the following questions :
- (i) Label the parts numbered 1 to 4.
- (ii) Name the two lobes present in the part labelled 1.
- (iii) Name any two hormones secreted by the respective lobes of the part labelled 1.
- (iv) Which of the labelled parts secrete the hormone thyroxine ?
- (v) Name the disorder caused due to the undersecretion of part labelled 2, in adults.



Question 5.

- (a) Complete the following table :

Part	Structure	Position
(i) Cone Cell		
(ii) Stomata		
(iii) Pocket Like Valve		
(iv) Pupil		
(v) Tympanum		

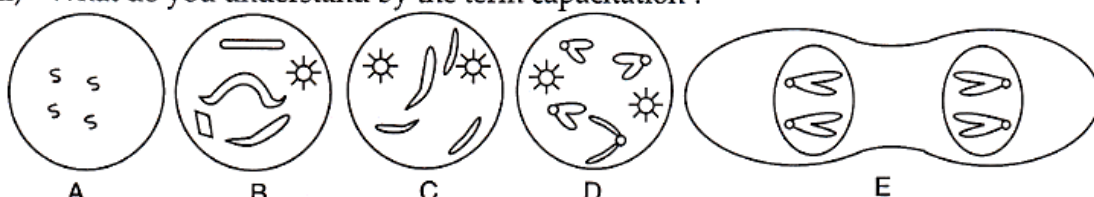
- (b) Describe the role of the following :

- | | | |
|-----------------|-----------------------|---------------|
| (i) Guard cell. | (ii) Lachrymal glands | (iii) Stomata |
| (iv) Thylakoid. | (v) Node of Ranvier | |

Question 6.

- (a) (i) Draw a diagram of the human sperm and label the following :
Acrosome, nucleus, centrioles, mitochondria, chondrial sheath and tail.
(ii) Define artificial insemination.
(iii) What do you understand by the term capacitation ?

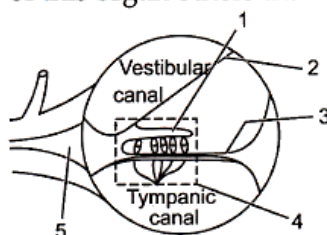
(b)



- (i) Above diagrams indicate the different stages of division in cell. Indicate whether it is a plant or animal cell.
(ii) Give reasons in support of your answer.
(iii) State briefly what is happening in A — E and name the stages.

Question 7.

- (a) The figure below shows a part of organ in human body :
(i) Label the parts indicated by the guidelines.
(ii) What parts are not shown in the diagram ?
(iii) Give the functions of parts labelled 1 and 2.
(iv) What is the significance of this organ others than hearing ? Name the organ.



- (b) Given below in the box are a set of 12 biological terms, which can be matched into 6 pairs. Of the six pairs, one has been done for you as an example. Write out the remaining 5 matching pairs made by you as (i) to (v).

Endemic goitre, Neurohypophysis, Hypersecretion of GSH, Posterior lobe of Pituitary gland, Myxoedema, Addison's disease, Pancreas, Deficiency of dietary iodine, Black freckles, Gigantism, Undersecretion of thyroid hormones, Islets of Langerhans.

Example : Endemic goitre — Deficiency of dietary iodine.