

# Self Assessment Paper

## General Instructions :

- (i) Answers to this paper must be written on the paper provided separately.
- (ii) You will **not** be allowed to write during the first 15 minutes.
- (iii) This time is to be spent in reading the question paper.
- (iv) The time given at the head of this paper is the time allowed for writing the answers.
- (v) Section I is compulsory. Attempt **any four** questions from Section II.
- (vi) The intended marks for questions or parts of questions are given in brackets [ ].

## SECTION - I

(40 Marks)

Attempt all questions from this Section

1. (a) Name the following : [5]
- (i) The process of uptake of mineral ions against the concentration gradient using energy from cell.
  - (ii) The form in which glucose is stored in liver.
  - (iii) The vein that carries oxygenated blood.
  - (iv) The hormone that regulate basal metabolic rate.
  - (v) The part of internal ear related the static balance of the body.
- [AI]** (b) Match the items in Column A with that which is most appropriate in Column B. Rewrite the matching pair. [5]

Column A	Column B
(1) Pituitary gland	(a) Kidney
(2) Guttation	(b) Water vapour
(3) Transpiration	(c) Prostate gland
(4) Clotting of blood	(c) Iron
(5) Uriniferous tubule	(e) Uterus
	(f) Growth hormone
	(g) Salk's vaccine
	(h) Water droplet
	(i) Calcium
	(j) Hydathodes

- (c) Choose the ODD one out of the following terms given and name the CATEGORY to which the others belong: [5]
- (i) Aqueous humour, Vitreous humour, Iris, Central canal
  - (ii) Pulmonary vein, Hepatic vein, Renal vein, Post caval.
  - (iii) ACTH, TSH, ADH, FSH
  - (iv) Phosphate, RNA, Sugar, Nitrogenous base
  - (v) Bile, Urea, Uric acid, Ammonia
- (d) State the exact location of the following structures: [5]
- (i) Centromere
  - (ii) Chordae tendinae
  - (iii) Thyroid gland
  - (iv) Ciliary body
  - (v) Proximal convoluted tubule.
- (e) Choose the correct answer from the four options given below: [5]
- (i) Which one of the following is associated with the maintenance of the posture?
 

A. Cerebrum	B. Cerebellum
C. Thalamus	D. Pons
  - [AI]** (ii) Number of spinal nerves in human beings are :
 

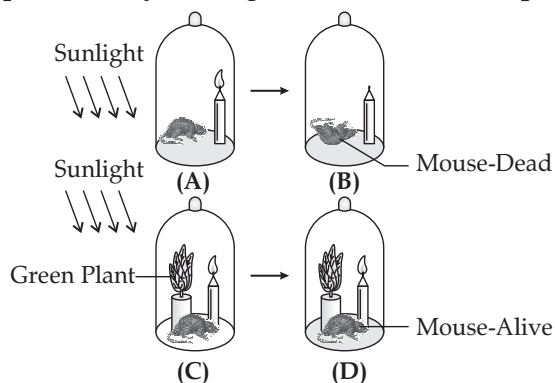
A. 31 pairs	B. 10 pairs
C. 12 pairs	D. 30 pairs
  - (iii) Which of the following is not a natural reflex action?
 

A. Knee-jerk	B. Blinking of eyes due to strong light
C. Salivation at the sight of food	D. Sneezing when any irritant enters the nose
  - (iv) Aqueous humor is present in between the :
 

A. Lens and Retina	B. Iris and Lens
C. Cornea and Iris	D. Cornea and Lens
  - [AI]** (v) A cell has five pairs of chromosomes. After mitotic division the number of chromosomes in the daughter cells will be :
 

A. Five	B. Ten
C. Twenty	D. Forty
- (f) Given below is an example of a certain structure and its special functional activity. On a similar pattern fill in the blanks with suitable functions: [5]
- Example: Chloroplast and photosynthesis**
- (i) Xylem and \_\_\_\_\_.
  - (ii) Ciliary body and \_\_\_\_\_.
  - (iii) Neutrophils and \_\_\_\_\_.
  - (iv) Thyroid gland and \_\_\_\_\_.
  - (v) Eustachian tube and \_\_\_\_\_.
- (g) Given below are five groups of terms. In each group, arrange and rewrite the terms in the correct order so as to be in a logical sequence. [5]
- For example, Question: Implantation, Parturition, Ovulation, Gestation, Fertilisation. Answer: (g) Ovulation, Fertilisation, Implantation, Gestation, Parturition.**
- (i) Spongy cells, Upper epidermis, Stoma, Palisade tissue, Sub-stomatal cavity.
  - (ii) Spinal cord, Motor neuron, Receptor, Effector, Sensory neuron
  - (iii) Endodermis, Cortex, Soil water, Xylem, Root hair
  - [AI]** (iv) Metaphase, Telophase, Prophase, Anaphase, Cytokinesis
  - (v) Intestine, Liver, Intestinal artery, Hepatic vein, Hepatic portal vein

- AI** (h) The diagram given below represents the relationship between a mouse and a physiological process that occurs in green plants. Study the diagram and answer the questions that follow: [5]



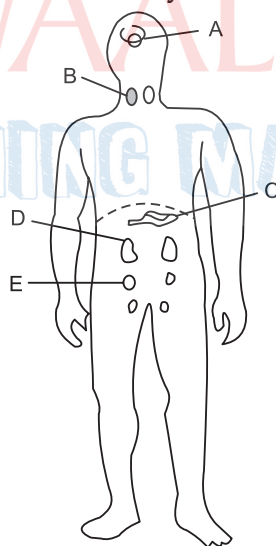
- (i) Name the physiological process occurring in the green plant that has kept the mouse alive.
- (ii) Explain the physiological process mentioned above.
- (iii) Why did the mouse die in the bell jar B?
- (iv) What is the significance of the process as stated in (i) for life on earth?
- (v) Represent the above mentioned physiological process in the form of a chemical equation.

## SECTION - II

(40 Marks)

*Attempt any four questions from this Section*

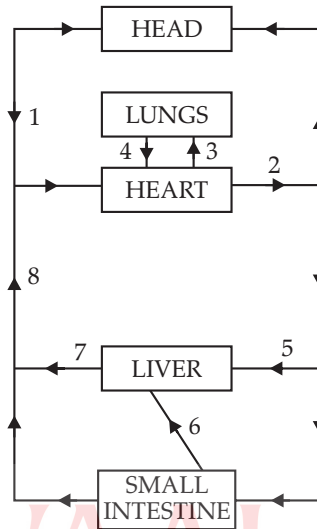
2. (a) Given below is the outline of the human body showing the important glands : [5]



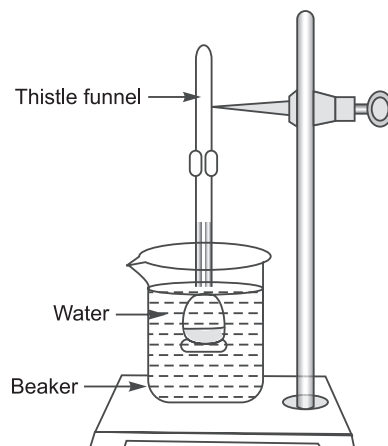
- (i) Name the glands marked A to E.
  - (ii) Name the hormone secreted by part B. Give one important function of this hormone.
  - (iii) Name the endocrine part of the numbered C.
  - (iv) Why is the part labelled A called the master gland? Which part of the forebrain controls the gland labelled A?
  - (v) Name the gland that secretes the 'emergency hormone'.
- (b) Give the biological/technical terms for the following:** [5]
- (i) Chemicals found in the blood which act against antigens.
  - (ii) Pigment providing colour to urine.
  - (iii) The vein which drains the blood from intestine to the liver.
  - (iv) The repeating components of each DNA strand length wise.
- AI** (v) The fluid present between the layers of meninges.
- (vi) Permanently open structures seen on the bark of an old woody stem.

- (vii) The process of uptake of mineral ions against the concentration gradient using energy from cell.
- (viii) The change in an organism resulting due to stimulus.
- (ix) An antiseptic substance present in tears.
- (x) A solution in which the relative concentration of water molecules and the solute on either side of the cell membrane is the same.

**AI** 3. (a) The diagram alongside represents the simplified pathway of the circulation of blood. Study the same and answer the questions that follows. [5]



- (i) Name the blood vessels labelled 1 and 2.
  - (ii) State the function of blood vessels labelled 5 and 8.
  - (iii) What is the importance of the blood vessel labelled 6?
  - (iv) Which blood vessel will contain a high amount of glucose and amino acids after a meal.
  - (v) Draw a diagram of the different blood cells as seen in a smear of human blood.
- (b) Differentiate between the following pairs on the basis of what is mentioned within brackets : [5]
- (i) Diffusion and Osmosis (**Definition**)
  - (ii) RBC and WBC (**Shape**)
  - (iii) Pure strains and hybrid strains (**definition**)
  - (iv) Vasopressin and Insulin (**Deficiency disorder**)
- AI** (v) Rods and Cones of Retina (**Type of pigment**)
4. (a) Given alongside is the diagram of an apparatus set-up to study a very important physiological process. [5]

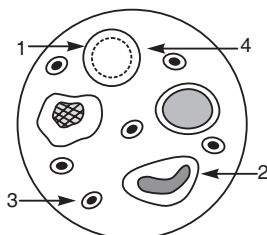


- (i) Name the process being studied.
- (ii) Explain the process.

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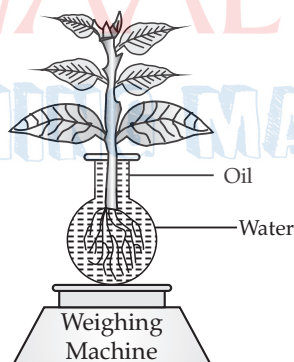
- (iii) What changes would you observe in the thistle funnel containing sugar solution after about 10 minutes?
- (iv) Is sugar solution hypotonic or hypertonic?
- (v) Name the part of the plant cell which is represented by the sugar solution.
- (vi) Explain why much salt is added to pickles ?

**AI** (b) Given below is a diagram of a human blood smear. Study the diagram and answer the questions that follow : [5]



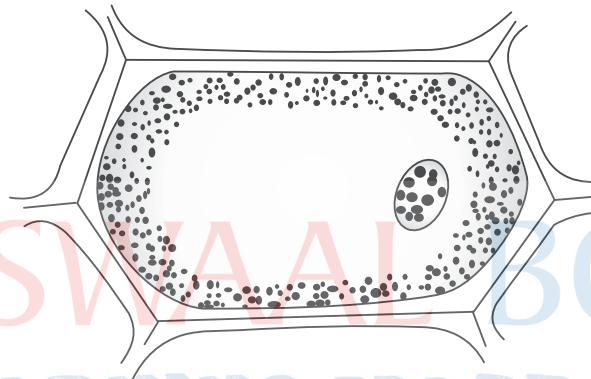
Smear of human blood

- (i) Name the components numbered '1' to '4'.
- (ii) Mention two structural differences between the parts '1' and '2'.
- (iii) Name the soluble protein found in part '4' which forms insoluble threads during clotting of blood.
- (iv) What is the average lifespan of the component numbered '1' ?
- (v) Component numbered '1' do not have certain organelles but are very efficient in their function Explain.
5. (a) The setup was placed in bright sunlight. Answer the following questions: [5]



- (i) Name the physiological process depicted in the diagram. Why was oil added to the water?
- (ii) When placed in bright sunlight for four hours, what do you observe with regard to the initial and final weight of the plant? Give a suitable reason for your answer.
- (iii) What happens to the level of water when this setup is placed in:
1. Humid condition
  2. Windy condition.
- (iv) Mention any three adaptation found in plants to overcome the process mentioned in (i).
- (v) Explain the term 'Guttation'.
- (b) Draw a diagram of the human eye as seen in a vertical section and label the parts which suit the following descriptions relating to the : [5]
- (i) Photosensitive layer of the eye.
  - (ii) Structure which is responsible for holding the eye lens in its position.
  - (iii) Structure which maintains the shape of the eye ball and the area of no vision.
  - (iv) Anterior chamber seen in front of the eye lens.
  - (v) Outer most transparent layer seen in front of the eye ball.

6. (a) (i) Draw a well labelled diagram of the membranous labyrinth found in the inner ear. [5]  
 (ii) Based on the diagram drawn above in (i) give a suitable term for each of the following description :
- The sensory cells that help in hearing.
  - The part that is responsible for static balance of the body.
  - The membrane covered opening that connects the middle ear to the inner ear.
  - The fluid present in the middle chamber of cochlea.
  - The structure that maintains dynamic equilibrium of the body.
- (b) Briefly explain the following terms : [5]
- [AI] (i) Reflex action  
 (ii) Power of accommodation  
 (iii) Photophosphorylation  
 (iv) Hormone  
 [AI] (v) Synapse
7. (a) The figure given below shows the epidermal cells of an onion bulb. This cell was then transferred to a drop of sugar solution. [5]



- Draw a well labelled diagram of the epidermal cell as it would appear after immersion in a strong sugar solution.
  - What scientific term is used for the changes as shown in (i) above ?
  - What should be done to restore the cell back to its original condition ?
  - Give the scientific term for the recovery of the cell as a result of the step taken in (iii) above.
  - Define the term osmosis.
- (b) Give biological reasons for the following : [5]
- [AI] (i) The wall of the ventricle is thicker than that of the auricle.  
 (ii) The renal cortex has a dotted appearance.  
 (iii) Wooden frames of doors get jammed during the monsoon season.  
 (iv) Throat infections can lead to ear infections.  
 [AI] (v) The hand automatically shows the direction to turn a cycle without thinking.



Finished Solving the Paper ?  
 Time to evaluate yourself !  
<https://qrqo.page.link/rttWS>

OR

SCAN THE CODE



For elaborate Solutions

**OSWAAL COGNITIVE**  
**LEARNING TOOLS**

