

**ICSE SEMESTER 2 EXAMINATION**  
**SPECIMEN QUESTION PAPER-1**  
**BIOLOGY**  
**(SCIENCE PAPER 3)**

*Maximum Marks: 40*

*Time allowed: One and a half hours*

*Answers to this Paper must be written on the paper provided separately.*

*You will not be allowed to write during the first 10 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.*

*Attempt all questions from Section A and any three questions from Section B.*

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*The intended marks for questions or parts of questions are given in brackets [ ].*

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**SECTION A**

**(Attempt all questions.)**

**Question 1**

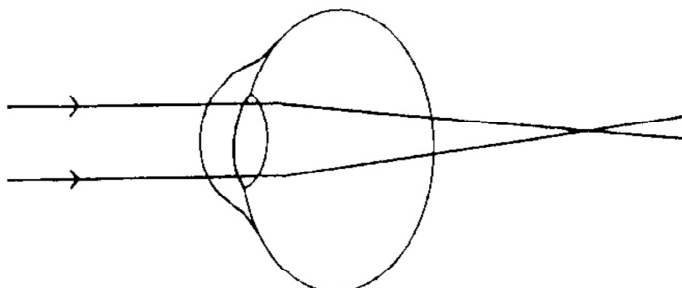
Name the following by choosing the correct answers to the questions from the given options. (Do not copy the question. Write the correct answer only) [10]

- (i) The process of removal of unwanted metabolic waste from the body is called :  
(a) Secretion                      (b) Emission                      (c) Excretion                      (d) Egestion
- (ii) The organ that does not belong to the excretory system is :  
(a) Urethra                      (b) Uterus                      (c) Ureter                      (d) Urinary bladder
- (iii) The bony protective covering of spinal cord is :  
(a) Meninges                      (b) Vertebrates                      (c) Vertebral column                      (d) Skull
- (iv) Any factor in the environment which can cause an organism to react is a :  
(a) Response                      (b) Reflex                      (c) Stimulus                      (d) Impulse
- (v) Full form of T S H is :  
(a) Tropic Stimulating Hormone                      (b) Thyroid Stimulating Hormone  
(c) Tropic Somatic Hormone                      (d) Thyroid Secretory Hormone
- (vi) A gland which secretes both enzymes and hormones is :  
(a) Thyroid                      (b) Pancreas                      (c) Adrenal                      (d) Pituitary
- (vii) An example of neurotransmitter is :  
(a) Endolymph                      (b) Cerebro spinal fluid                      (c) Acetylcholine                      (d) Perilymph
- (viii) The photo receptive cell of the retina sensitive to colour is :  
(a) Rods                      (b) Cones                      (c) Iris                      (d) Cornea
- (ix) The rate of heart beat is controlled by :  
(a) S.A. Node                      (b) A.V. Node                      (c) Cranial Nerves                      (d) Spinal Nerves
- (x) The chamber of the heart which sends deoxygenated blood to the lungs is :  
(a) Right auricle                      (b) Left auricle                      (c) Right Ventricle                      (d) Left Ventricle

**SECTION B**  
(Attempt any three questions from this Section.)

**Question 2**

- (i) (i) Define 'Phagocytosis'. Name the kind of granular W.B.C. which actively participate in the process. [2]  
 (ii) Write the exact location and function of Haemoglobin. [2]  
 (iii) Given below is a diagrammatic representation of a defect of the human eye. [3]



- (a) Identify the defect.  
 (b) What kind of lens can be used to rectify the defect ?  
 (c) Name the part of the eye responsible for maintaining the shape of the eyeball.  
 (iv) Name three conditions caused by hypothyroidism. [2]

**Question 3**

- (i) Write full form of the following abbreviations : [2]  
 (a) A D H (b) D C T  
 (ii) Distinguish between 'Haematuria' and 'Glycosuria' on the basis of abnormal constituents in urine. [2]  
 (iii) Complete the following table by filling the blanks (a), (b) and (c). [3]

| Gland               | Hormone secreted | Role             |
|---------------------|------------------|------------------|
| (a)_____            | (b)_____         | Basal metabolism |
| Posterior Pituitary | Oxytocin         | (c)_____         |

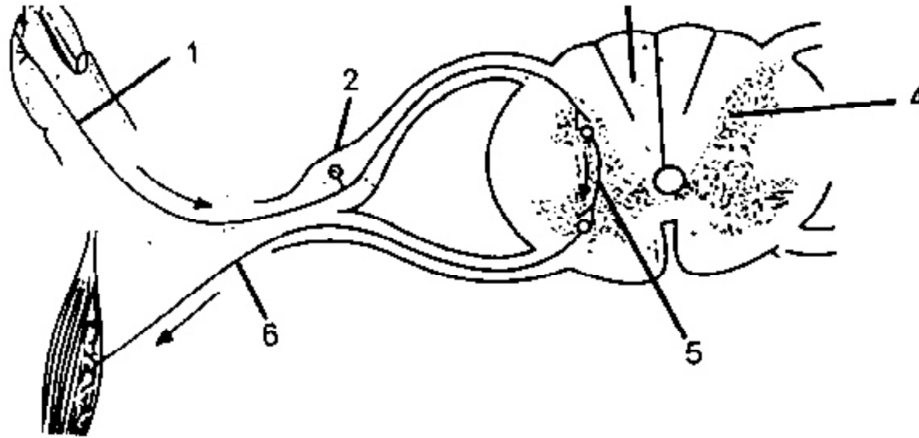
- (iv) Name the part of the brain from which the spinal cord extends. How does the arrangement of neurons in the spinal cord differ from that of the brain ? [3]

**Question 4**

- (i) State the exact location and function of 'Macula lutea'. [2]  
 (ii) Distinguish between Polycythaemia and Erythropenia. [2]  
 (iii) Name three inorganic constituents of urine. [3]  
 (iv) An adult person has excessive growth of bones in the face, hand and feet. The person develops a large nose and thick lips. [3]  
 (a) Identify the disorder.  
 (b) What is the cause of this abnormality ?  
 (c) Name the gland associated for this disorder.

### Question 5

- (i) Write two important functions of 'Aqueous humour'. [2]
- (ii) Cornea of the eye is transparent but it appears black . Explain. [2]
- (iii) What is meant by the 'accommodation' of eye ? Name its two kinds. [3]
- (iv) The diagram given below is a representation of a certain phenomenon pertaining to the nervous system. [3]



- (a) Name the phenomenon that is being depicted.
- (b) Name the part 5.
- (c) Write the function of part 6.

### Question 6

- (i) What are the two different kinds of blood circulations occurring inside the human body ? Name them. [2]
- (ii) How does glomerular filtrate differ from urine ? [2]
- (iii) Name a blood cell, a mineral and a vitamin which are involved in the process of blood coagulation. [3]
- (iv) Draw neat diagram of a 'Malpighian capsule' and label its two major parts. [3]

**ICSE SEMESTER 2 EXAMINATION**  
**SPECIMEN QUESTION PAPER-2**  
**BIOLOGY**  
**(SCIENCE PAPER 3)**

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**SECTION A**

**(Attempt all questions.)**

**Question 1**

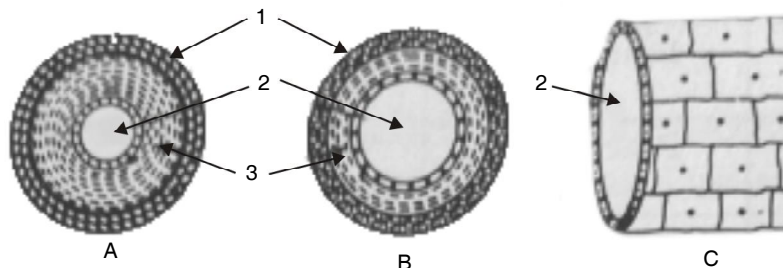
Name the following by choosing the correct answers to the questions from the given options. (Do not copy the question. Write the correct answer only) [10]

- (i) Voluntary actions of the brain are controlled by :  
(a) Cerebellum                      (b) Medulla oblongata                      (c) Cerebrum                      (d) Pons
- (ii) Gyri and Sulci are richly found in :  
(a) Renal cortex                      (b) Spinal cortex                      (c) Cerebral cortex                      (d) Adrenal cortex
- (iii) Which of the following is termed as the basic structural and functional unit of kidney ?  
(a) Neuron                      (b) Nephron                      (c) Nerve                      (d) Neurilemma
- (iv) The organ which is not an accessory excretory organ is :  
(a) Liver                      (b) Lung                      (c) Kidney                      (d) Skin
- (v) Agranulocytes are :  
(a) Lymphocytes and Monocytes                      (b) Basophils and Lymphocytes  
(c) Eosinophils and Basophils                      (d) Monocytes and Neutrophils
- (vi) The platelets are derived from :  
(a) Macrokaryocytes                      (b) Megakaryocytes                      (c) Microkaryocytes                      (d) Megakaryons
- (vii) The coloured extension of the choroid in the front side of the eye is termed as :  
(a) Cornea                      (b) Cochlea                      (c) Iris                      (d) Pupil
- (viii) The specific part of inner ear which contains sensory cells for dynamic balance is :  
(a) Organ of Corti                      (b) Endolymph                      (c) Vestibule                      (d) Ampulla
- (ix) Which of the following is a kind of a tropic hormone ?  
(a) Mineralocorticoids                      (b) Epinephrin  
(c) Vasopressin                      (d) Gonad Stimulating Hormone
- (x) The active ingredient needed for the production of thyroxine is :  
(a) Calcium                      (b) Magnesium                      (c) Iodine                      (d) Iron

**SECTION B**  
(Attempt any three questions from this Section.)

**Question 2**

- (i) Define 'blood transfusion'. Name the blood group which is the universal recipient. [2]
- (ii) Name the 'master gland' of the human body. Write its location. [2]
- (iii) What is lymph ? Name two lymphatic organs of the human body. [3]
- (iv) The diagrams given below are cross sections of blood vessels : [3]



- (a) Name the part labelled 3.
- (b) Name the type of blood that flows through A .
- (c) In which of the above vessels does exchange of gases actually take place ?

**Question 3**

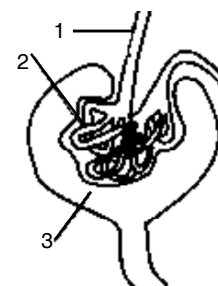
- (i) Define 'ultrafiltration'. Where does it occur during urine formation ? [2]
- (ii) Write the exact location of each of the following : [2]
  - (a) Cochlea
  - (b) Conjunctiva
- (iii) Write one important function of : [3]
  - (a) Hypothalamus
  - (b) Pons
  - (c) Auditory Nerves
- (iv) Draw a neat diagram of a neuron and label : [3]
  - (a) Axon
  - (b) Nissl's granules
  - (c) Nodes of Ranvier

**Question 4**

- (i) Explain 'adaptation of the eyes'. Name the two types of adaptation. [2]
- (ii) Name two pigments found in the sensory cells of a human eye. [2]
- (iii) Identify the hormonal disorders from the following symptoms : [3]
  - (a) Eyes are protruded.
  - (b) Urine is loaded with sugar.
  - (c) Dwarfism and mental retardation in children.
- (iv) Name the three major blood vessels which enter the heart. [3]

**Question 5**

- (i) Define 'pulse'. Name the instrument used to measure blood pressure. [2]
- (ii) Name two bile pigments. [2]
- (iii) The diagram given below is a part of nephron of the kidney. Answer the following questions : [3]
  - (a) Name the part labelled as 1.
  - (b) Name the region in the kidney where the given structure is present.
  - (c) What is the collective term used for 2 and 3 ?



- (iv) Write the technical terms for : [3]
- (a) The pigments which give colour to the urine.
  - (b) The pigment found in the choroid layer of the eye.
  - (c) The pigment found in Erythrocytes .

**Question 6**

- (i) Distinguish between Exocrine and Endocrine glands with one example of each. [2]
- (ii) Write the location and function of Eustachian tube. [2]
- (iii) Complete the following table by filling in the blanks(a), (b) & (c). [3]

| Gland               | Hormone  | Disorder due to hyposecretion |
|---------------------|----------|-------------------------------|
| Posterior pituitary | (a)_____ | Diabetes insipidus            |
| (b)_____            | Insulin  | (c) _____                     |

- (iv) Write the technical terms for : [3]
- (a) Collection of axons
  - (b) Collection of cytons
  - (c) Special group of hormone secreting cells of the Pancreas.

**ICSE SEMESTER 2 EXAMINATION**  
**SPECIMEN QUESTION PAPER-3**  
**BIOLOGY**  
**(SCIENCE PAPER 3)**

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**SECTION A**

**(Attempt all questions.)**

**Question 1**

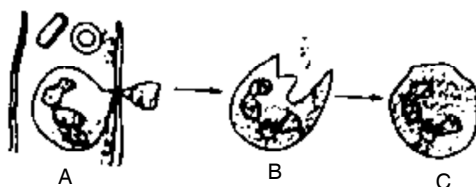
Name the following by choosing the correct answers to the questions from the given options. (Do not copy the question. Write the correct answer only) [10]

- (i) The structure present in the kidneys which acts as a filter is :  
(a) Neuron                      (b) Nephron                      (c) Nephrin                      (d) Nephridia
- (ii) Kidney stones are formed when the urine contains crystals of :  
(a) Calcium chloride                      (b) Copper carbonate  
(c) Calcium oxalate                      (d) Calcium sulphate
- (iii) Myxoedema is a condition caused by :  
(a) undersecretion of thyroxine                      (b) undersecretion of cortisone  
(c) oversecretion of thyroxine                      (d) oversecretion of cortisone
- (iv) The number of cranial nerves in our body is :  
(a) 12 pairs                      (b) 31 pairs                      (c) 13 pairs                      (d) 21 pairs
- (v) The vein that carries oxygenated blood is :  
(a) Renal Vein                      (b) Hepatic Vein                      (c) Pulmonary Vein                      (d) Cardiac Vein
- (vi) The blood vessel that starts with capillaries and ends into capillaries is :  
(a) Hepatic Artery                      (b) Hepatic Portal Vein                      (c) Coronary Artery                      (d) Hepatic Vein
- (vii) The thin, transparent layer of the eye (cornea) is an extension of :  
(a) Choroid                      (b) Sclera                      (c) Iris                      (d) Retina
- (viii) Optic nerves emerge from which part of the eye ?  
(a) Yellow spot                      (b) Blind spot                      (c) Eye spot                      (d) Conjunctiva
- (ix) The condition caused due to an overgrowth of adrenal cortex in a mature woman is called :  
(a) Addison's disease                      (b) Cushing's Syndrome                      (c) Adrenal virilism                      (d) Renal virilism
- (x) The hormone 'Glucagon' is secreted from which cells of 'Islets of Langerhans' ?  
(a) Beta Cells                      (b) Alpha Cells                      (c) Gamma Cells                      (d) Delta Cells

**SECTION B**  
(Attempt any three questions from this Section.)

**Question 2**

- (i) Name two non-circulating fluids of our body. [2]
- (ii) Write the exact location and specific function of corpus callosum. [2]
- (iii) The figures (A to C) given below show the activity of a certain kind of cells in the human body. [3]



- (a) Write the technical term for the cellular structure shown in A.
- (b) Write the technical term for the activity shown in A.
- (c) Name the event shown in figures B and C.
- (iv) Write one important role of each of the following : [3]
  - (a) Semicircular canal      (b) Utriculus and Sacculus      (c) Cochlea

**Question 3**

- (i) Write the technical terms for the following combinations : [2]
  - (a) Glomerulus + Bowman's capsule      (b) Duramater + Arachnoid + Piamater
- (ii) What is the significance of hepatic portal system ? Mention in two points. [2]
- (iii) Name the blood vessel that has : [3]
  - (a) Thin muscular wall with wider lumen
  - (b) Thick muscular wall with narrow lumen
  - (c) No muscular wall with very narrow lumen
- (iv) Name the three layers of the eye ball starting from the outside. [3]

**Question 4**

- (i) Define Excretion. Name one accessory excretory organ of the human body. [2]
- (ii) Gyri and Sulci of Cerebrum are significant. Explain. [2]
- (iii) Name three categories of Cortisone . [3]
- (iv) Draw a neat diagram of inner ear and label the parts responsible for : [3]
  - (a) Hearing      (b) Dynamic balance

**Question 5**

- (i) Define 'Diuresis'. Name two diuretics. [2]
- (ii) Name two organs of the human body which are not glands but secrete hormones. [2]
- (iii) The figure given below shows an important structure of the human body. [3]
  - (a) Name the part shown as A.
  - (b) Write technical term for the interconnection between the two lobes of part A.
  - (c) Name the two hormones secreted by part A.





- (iv) State whether the following are natural or conditioned reflexes : [3]
- (a) Blinking
  - (b) Playing on a musical instrument
  - (c) Contraction of the pupil

**Question 6**

- (i) Distinguish between the composition of blood flowing through afferent and efferent arteriole (water and urea). [2]
- (ii) Write the full forms of : [2]
- (a) P N S
  - (b) A C T H
- (iii) Identify the eye defect from the clues given below : [3]
- (a) It arises due to the uneven curvature of the cornea.
  - (b) Far sightedness when lens loses flexibility.
  - (c) When lens turns opaque , vision is cut down.
- (iv) Complete the following table by filling in the blanks (a, b & c). [3]

| Parts of Renal tubule | Activity        |
|-----------------------|-----------------|
| (a) _____             | Ultrafiltration |
| (b) Bowman's capsule  | _____           |
| (c) _____             | Collects urine  |

**ICSE SEMESTER 2 EXAMINATION**  
**SPECIMEN QUESTION PAPER-4**  
**BIOLOGY**  
**(SCIENCE PAPER 3)**

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**SECTION A**

**(Attempt all questions.)**

**Question 1**

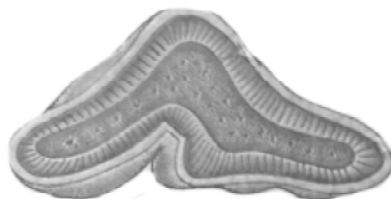
Name the following by choosing the correct answers to the questions from the given options. (Do not copy the question. Write the correct answer only) [10]

- (i) Blood transfusion is compatible in which of the following cases ?  
(a)  $A \rightarrow O$                       (b)  $A \rightarrow AB$                       (c)  $AB \rightarrow O$                       (d)  $A \rightarrow B$
- (ii) Which of the following is a circulating fluid in the human body ?  
(a) Tears                      (b) Aqueous humour                      (c) Lymph                      (d) Sweat
- (iii) Which of the following is not an example of secretion ?  
(a) Saliva                      (b) Gastric juice                      (c) Urine                      (d) Milk
- (iv) The pigment which is the breakdown product of the haemoglobin of dead RBCs is :  
(a) Melanin                      (b) Bilirubin                      (c) Urochrome                      (d) Iodopsin
- (v) Transmission of the (Excited) nerve impulse occurs during :  
(a) Polarised state                      (b) Depolarised state                      (c) Repolarised state                      (d) None of these
- (vi) The structure which acts as an insulating sheath is :  
(a) Nodes of Ranvier                      (b) Collaterals                      (c) Myelin Sheath                      (d) Axon endings
- (vii) Tears contain :  
(a) Lysosome                      (b) Lysine                      (c) Lysozyme                      (d) Limonene
- (viii) Human ear is concerned with :  
(a) Hearing                      (b) Dynamic balance                      (c) Static balance                      (d) All of these
- (ix) Which of the following is not an endocrine gland ?  
(a) Adrenal gland                      (b) Thyroid gland                      (c) Lacrimal gland                      (d) Pituitary gland
- (x) Dwarfism is caused due to the undersecretion of :  
(a) ADH                      (b) TSH                      (c) FSH                      (d) GH

**SECTION B**  
(Attempt any three questions from this Section.)

**Question 2**

- (i) What do you mean by 'photoreceptors' ? Write their location in the human body. [2]  
 (ii) Distinguish between Light and Dark adaptation (size of the pupil). [2]  
 (iii) The figure given below is the internal structure of a gland. [3]



- (a) Identify the gland.  
 (b) Write its exact location in the human body.  
 (c) Name the hormone secreted from its central part.  
 (iv) Give suitable scientific terms for the following statements : [3]  
 (a) The process by which kidneys regulate the water content of the body.  
 (b) The act of voiding urine from the body.  
 (c) The hormone responsible for fight, fear or flight.

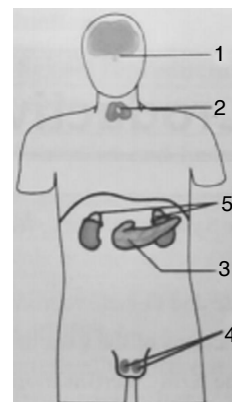
**Question 3**

- (i) Give technical / biological terms for : [2]  
 (a) The structure that holds the heart valves in position.  
 (b) Chest pain due to inadequate supply of oxygen to the heart muscles.  
 (ii) Distinguish between Night blindness and Colour blindness (cause). [2]  
 (iii) Complete the given table (a), (b), (c) with the most suitable terms : [3]

| SUBSTANCES                    | PRODUCT  |
|-------------------------------|----------|
| Oxygen + Haemoglobin          | (a)_____ |
| Carbon monoxide + Haemoglobin | (b)_____ |
| Carbon dioxide + Haemoglobin  | (c)_____ |

- (iv) The figure given below is an outline of the human body showing important glands. [3]

- (a) Name the group of cells present in part-3 which are endocrine in nature.  
 (b) Why is the part labelled as 1 is termed as the master gland ?  
 (c) Name the hormone secreted from part-2



#### Question 4

- (i) Name the two different kinds of adjustments of our eyes that occur with : [2]
  - (a) Change of shape of the eye lens.
  - (b) Change in the size of the pupil.
- (ii) Neurotransmitters are broken down by an enzyme just after passing an impulse from one neuron to the other. Explain. Give one example of a Neurotransmitter. [2]
- (iii) Identify the kind of Leukocytes on the basis of their function : [3]
  - (a) Release chemicals like histamine which dilate blood vessels.
  - (b) Produce antibodies.
  - (c) Secrete antitoxins.
- (iv) Write the full forms of the following abbreviations : [3]
  - (a) P C T
  - (b) D C T
  - (c) O R S

#### Question 5

- (i) Name : [2]
  - (a) An anticoagulant
  - (b) The smallest W B C
- (ii) Distinguish between Addison's disease and Cushing's syndrome (cause and sugar level). [2]
- (iii) The diagram shows a section of the human brain : [3]



- (a) Write one important function of the part labelled A.
- (b) What handicap would result from damage to part B ?
- (c) Name the guideline labelled as C.
- (iv) What are the three ways by which water is lost from the human body ? [3]

#### Question 6

- (i) Distinguish between 'Nerve impulse' and 'Electricity' with respect to speed. [2]
- (ii) Name the two categories of effectors in the human body. [2]
- (iii) Identify the hormone from the following functions : [3]
  - (a) It regulates ossification of bones.
  - (b) It stimulates the breakdown of glycogen in the liver to glucose .
  - (c) It regulates the activities of testis and ovaries .
- (iv) Give biological terms for each of the following : [3]
  - (a) The spiral organ found in the membranous labyrinth.
  - (b) The part which contains sensory cells for dynamic balance in the semicircular canal .
  - (c) The part which contains sensory cells for hearing in the middle canal of Cochlea.

**ICSE SEMESTER 2 EXAMINATION**  
**SPECIMEN QUESTION PAPER-5**  
**BIOLOGY**  
**(SCIENCE PAPER 3)**

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---

**SECTION A**

**(Attempt all questions.)**

**Question 1**

Name the following by choosing the correct answers to the questions from the given options. (Do not copy the question. Write the correct answer only) [10]

- (i) Which of the following is found in a mature R.B.C. ?  
(a) Nucleus (b) Haemoglobin  
(c) Mitochondria (d) Endoplasmic Reticulum
- (ii) The concept of blood grouping was discovered by:  
(a) Carolus Linnaeus (b) Gregor Mendel (c) Walther Flemming (d) Karl Landsteiner
- (iii) O R S is suggested to a patient suffering from :  
(a) Glycosuria (b) Nephritis (c) Cholera (d) Diabetes
- (iv) Pick the odd one out :  
(a) Bile (b) Uric acid (c) Ammonia (d) Urea
- (v) Which of the following organelles is absent in a neuron ?  
(a) Chromosome (b) Centrosome (c) Chromoplast (d) Chromatid
- (vi) The white matter of cerebrum mainly consists of :  
(a) Axons (b) Cytons (c) Dendrons (d) Dendrites
- (vii) The posterior part of retina, just opposite to the lens is :  
(a) Blind spot (b) Eye spot (c) Fovea Centralis (d) Red spot
- (viii) The aperture controlling the passage of light into the eye is :  
(a) Iris (b) Pupil (c) Suspensory ligament (d) Ciliary body
- (ix) Tropic hormones are released by :  
(a) Liver (b) Thyroid (c) Pancreas (d) Pituitary
- (x) Islets of Langerhans are found in the:  
(a) Thyroid (b) Pancreas (c) Liver (d) Gall bladder

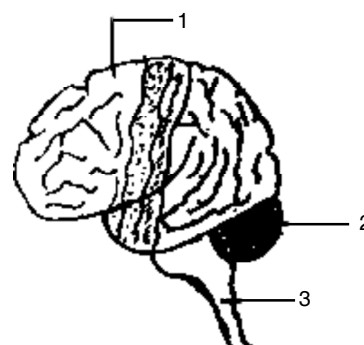
**SECTION B**  
(Attempt any three questions from this Section.)

**Question 2**

- (i) What kind of image is formed on the retina of the eye ? [2]  
 (ii) Distinguish between near and distant accommodation (shape of the eye lens). [2]  
 (iii) Complete the table with the name of arteries (a), (b), (c) according to the functions given in the next column. [3]

| Major Arteries | Functions                          |
|----------------|------------------------------------|
| (a) _____      | Carries blood from heart to lungs  |
| (b) _____      | Carries blood from heart to liver  |
| (c) _____      | Carries blood from heart to kidney |

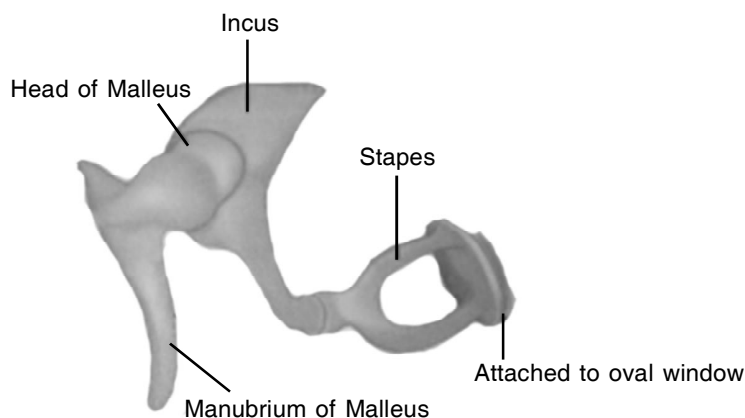
- (iv) The diagram given below is the external view of a human brain. [3]



- (a) Name the part labelled as 1.  
 (b) Write one important role of part- 2.  
 (c) Name the fluid that surrounds the brain.

**Question 3**

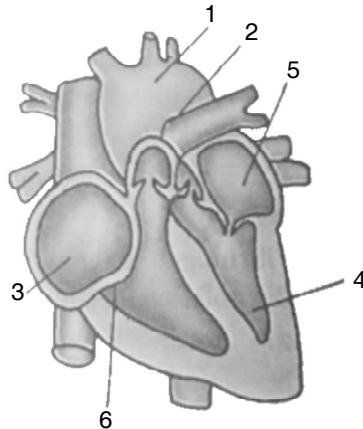
- (i) Define 'Micturition'. Is it controlled by the Endocrine system or the Nervous system? [2]  
 (ii) Name two chambers of the eye. [2]  
 (iii) Write full forms of each of the following : [3]  
       (a) A C T H                      (b) L H                      (c) F S H  
 (iv) Given below is a part of the human ear. [3]



- (a) Write the exact location of the part shown above, inside the human ear.  
 (b) What is the technical name for Malleus, Incus and Stapes together ?  
 (c) What function of ear will be affected if all these three bones will be replaced by a single bone ?

#### Question 4

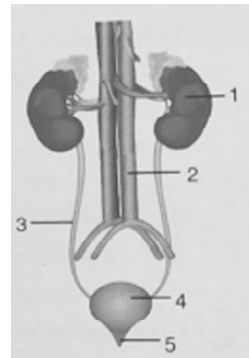
- (i) Distinguish between Erythrocytes and Thrombocytes on the basis of the their life-span. [2]
- (ii) What are the antigen/antibodies found in blood group 'O' ? [2]
- (iii) Write specific protective membranous coverings of the following organs : [3]
  - (a) Heart
  - (b) Spinal cord
  - (c) Kidney
- (iv) Given below is the diagram of the internal structure of a mammalian heart in a certain stage of activity. [3]



- (a) Name the activity.
- (b) Name the part numbered 1.
- (c) Write one specific feature of the blood vessel labelled as 2 and name it.

#### Question 5

- (i) Write two important functions of tears. [2]
- (ii) Give reasons : [2]
  - (a) Renal cortex has dotted appearance in the sectional view of a kidney.
  - (b) Renal medulla gives a striped appearance in the sectional view of a kidney.
- (iii) Study the diagram and answer the following questions. [3]
  - (a) Write one important role of the part labelled as 3.
  - (b) Mention the exact location of the part labelled as 1.
  - (c) Mention the part which stores urine temporarily (name and number).
- (iv) Name the disorder caused due to : [3]
  - (a) Hypersecretion of thyroxine
  - (b) Hypersecretion of Somatotropin in children.
  - (c) Hypersecretion of Cortisone from adrenal cortex.



#### Question 6

- (i) Name two parts of Diencephalon. [2]
- (ii) Write one important role of : [2]
  - (a) Prolactin
  - (b) Oxytocin
- (iii) Draw a neat diagram of the 'master gland' of the human body. Name it and show its two main lobes. [3]
- (iv) Name three types of nerves in the human body. [3]





