FIITJEE

ICSE PART TEST – II

BIOLOGY

Time: 1:30 Hours **Max Marks: 40**

Instructions:

1. **Section – A (20 Marks):** Attempt all questions from this section.
   Q1. (a), (b), (c), (d) each part is of 5 Marks.

2. **Section – B (20 Marks):** Attempt any 2 questions from this section.
   Q2. (a) 5 Marks, (b) 5 Mark,
   Q3. (a) 5 Marks, (b) 5 Mark
   Q4. (a) 5 Marks, (b) 5 Mark
   Q5. (a) 5 Marks, (b) 5 Mark

3. Wherever necessary, neat and properly labled diagram should be drawn.

Name of the Candidate : .....

Enroll Number *:* .....

Date of Examination : .....

SECTION-A

1. (a) Name the following : **[5]**

(i) The form in which glucose is stored in liver.
(ii) The vein that carries oxygenated blood.
(iii) The phase of cardiac cycle in which the auricles contract.
(iv) The organ where urea is produced.
(v) The hormone that helps increase the reabsorption of water from the kidney tubules.

(b) The statement given below is False. Rewrite the correct form of the statement by changing the word which is underlined: **[5]**

(i) Alpha cells of pancreas secrete Insulin.
(ii) Cretinism is caused due to deficiency of Adrenaline.
(iii) Photosynthesis occurs in all the cells of the plant.
(iv) The pituitary gland is both exocrine and endocrine in function.
(v) All voluntary actions are controlled by the cerebellum.

(c) Choose the correct answer from the four options given below: **[5]**

(i) A single highly coiled tube where sperms are stored gets concentrated and mature is known as
(A) Epididymis (B) Vas efferentia
(C) Vas deferens (D) Seminiferous tubule

(ii) The number of spinal nerves in human are:–
(A) 31 pair (B) 10
(C) 21 (D) 20

(iii) Aqueous humour is present between the
(A) Lens & Retina (B) Iris & Lens
(C) Cornea and Iris (D) Cornea & Lens

(iv) Which one of the following is mainly associated with the maintenance of the posture?
(A) Cerebrum (B) Cerebellum
(C) Thalamus (D) Pons

(v) The normal pale colour of urine is due to the pigment called _____.
(A) Melanin (B) Haemoglobin
(C) Urocrome (D) none

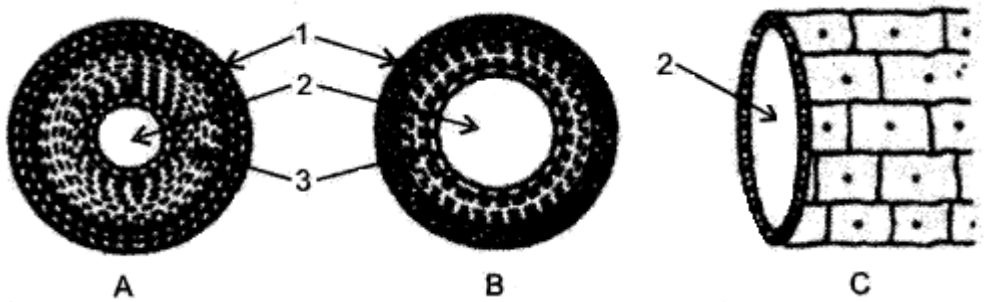
(d) Match the items in Column A with the most appropriate ones in Column B. Rewrite the matching pairs as shown in the example: **[5]**

Example : Fibrinogen – Clotting of blood.

	Column A		**Column B**
(1)	Mouth	(a)	largest artery
(2)	Leydig cells	(b)	starch
(3)	Kidney	(c)	salivary glands
(4)	Amylase	(d)	dynamic equilibrium
(5)	Aorta	(e)	testosterone
		(f)	sudden change in genes
		(g)	glomerulus

SECTION – B

1. (a) The diagrams given below are cross sections of blood vessels: [5]

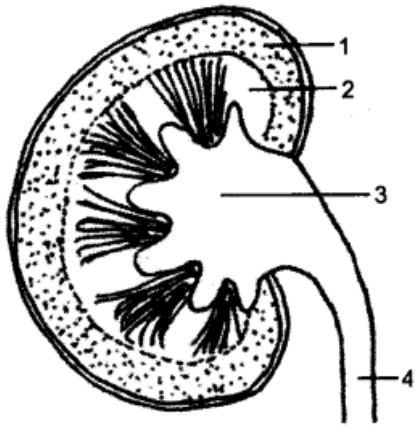


(i) Identify the blood vessels A, B and C.
(ii) Name the parts labelled 1 to 3.
(iii) Name the type of blood that flows through A.
(iv) Mention one structural difference between A and B.
(v) In which of the above vessels does exchange of gases actually take place?

(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) Tubectomy and Vasectomy (Part cut and tied)
(iv) Vasopressin and Insulin (Deficiency disorder)
(v) Rods and Cones of Retina (Type of pigment)

2. (a) The diagram given below shows a section of human kidney. Study the diagram carefully and answer the questions that follow: [5]

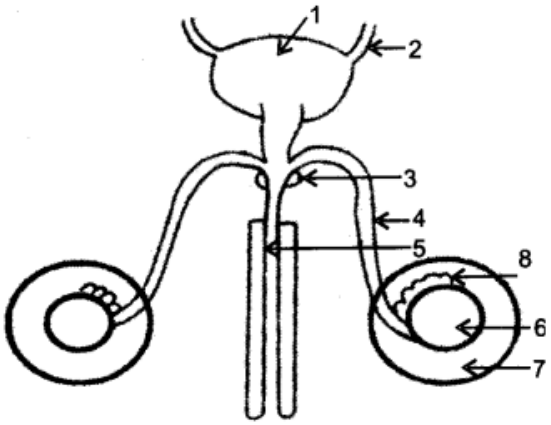


(i) Label the parts numbered 1 to 4.
(ii) Why does part '2' have a striped appearance?
(iii) What is the fluid that passes down part '4'? Name the main nitrogenous waste present in it.
(iv) Mention the structural and functional units of kidneys.
(v) Name the two major steps in the formation of the fluid mentioned in Q. 5. (a) (iii)

(b) Draw neat and labeled diagrams of the following. [5]

(i) Malpighian capsule (ii) A Myelinated neuron

3. (a) The diagram given below shows the male urinogenital system of a human being. Study the diagram and answer the questions that follow: [5]

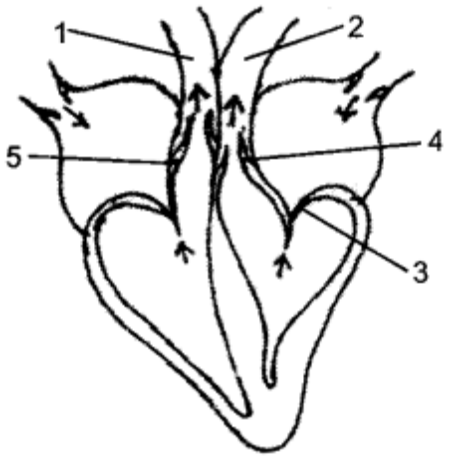


(i) Label the parts numbered 1 to 8.
(ii) Name the corresponding structure of part(s) in female reproductive system.
(iii) What is the role of part 7?

(b) Name the hormone responsible for the following functions: [5]

(i) Increase in heart beat.
(ii) Maintains glucose level in the blood.
(iii) Converting Glycogen to Glucose.
(iv) Regulates basal metabolism.
(v) Ossification of bones,
(vi) Prepares the body during emergency.
(vii) Responsible for normal growth of the whole body.
(viii) Regulates the functioning of the male and female reproductive organs.
(ix) Increased reabsorption of water in the kidneys.
(x) Increased blood supply to muscles.

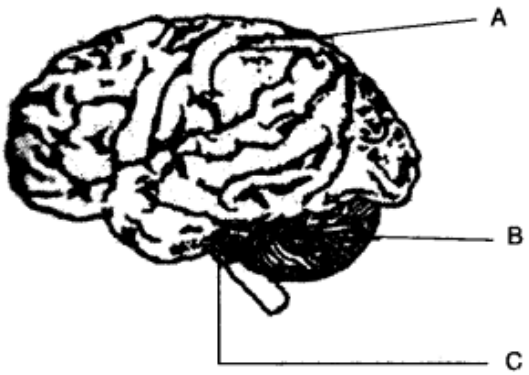
4. (a) The diagram given alongside represents the human heart in one phase of its functions. Study the diagram carefully and answer the questions that follow. [5]



(i) Name the phase
(ii) Which part of the heart is contracting in the phase? Give a reason to support your answer.
(iii) Name the parts labeled 1 to 4.
(iv) What type of blood flows through '2'?
(v) State the function of the part numbered '5'?
(vi) Name the membrane that covers the heart.

(b) Explain the following terms.

The diagram shows a section of the human brain. Answer the questions that follow.



(i) Name the parts labelled A, B and C.
(ii) Give the main function of each of the parts A, B, and C.
(iii) Name the three protective membranes covering the brain.
(iv) Name the basic unit of the brain.

HINTS & SOLUTIONS

1. (a) (i) Glycogen
(ii) Pulmonary vein
(iii) Auricular systole
(iv) Liver
(v) Antidiuretic hormone/Vasopressin

(b) (i) FALSE – Alpha cells of pancreas Secrete glucagon.
(ii) FALSE – Cretinism is caused by deficiency of Thyroxine.
(iii) FALSE – "Respiration occurs in all the cells of the plant.
(iv) FALSE – "The pancreas gland is both exocrine and endocrine in function".
(v) True

(c) (i) (A) Epididymis
(ii) (A) 31pairs
(iii) (D) Cornea and Lens
(iv) (B) Cerebellum
(v) (C) Urocrome

(d)

	Column A		Column B
(1)	Mouth	(c)	salivary glands
(2)	Leydig cells	(e)	testosterone
(3)	Kidney	(g)	glomerulus
(4)	Amylase	(b)	starch
(5)	Aorta	(a)	largest artery

SECTION B

1. (a) (i) 1. Connective tissue layer 2. Lumen 3. Muscular layer
(ii) Oxygenated blood
(iii) A → Artery, B → Vein C → Capillary
(iv)

	A	B
1.	Thick muscular and elastic layer as wall.	Thin muscular and less elastic wall.
2.	Narrow lumen	Wide lumen.

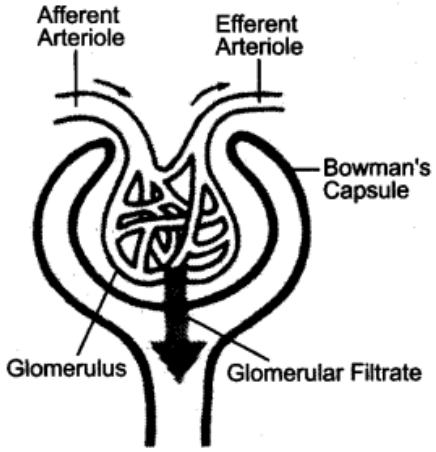
(v) In C/Capillary

(b) (i) Diffusion: Process of flow of solvent, solute or gaseous molecules from high concentration to low concentration, when the two are in direct contact.
Osmosis: Process of flow of solvent molecules from low concentration to high concentration through a semi permeable membrane.
(ii) RBC: Biconcave, spherical, disc like, non-nucleated.
WBC: Amoeboid, nucleated
(iii) Tubecotomy: Oviduct/Fallopian tube
Vasectomy: Sperm duct/Vas deferens
(iv) Vasopressin: Diabetes insipidus
Insulin: Diabetes mellitus
(v) Rods: Rhodspin
Cones: Iodopsin

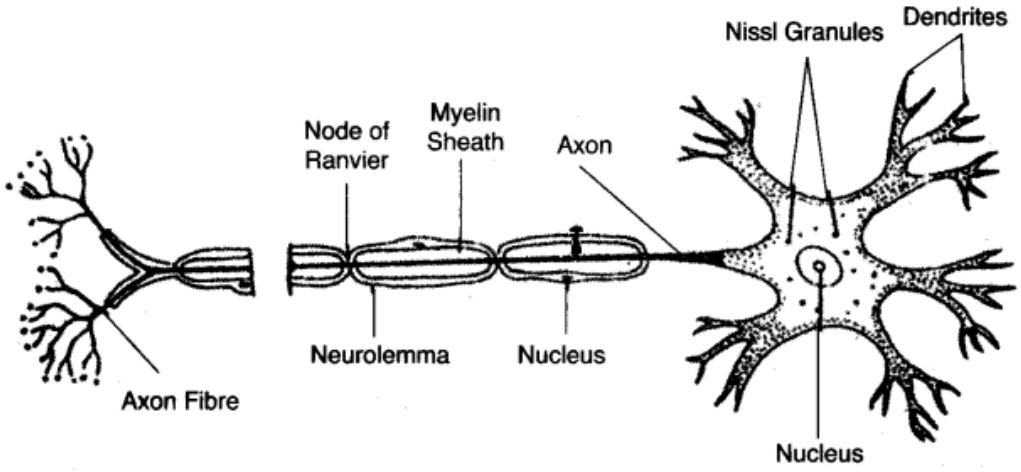
2. (a) (i) 1. Cortex, (2) Medulla, (3) Pelvis, (4) Ureter
(ii) Part 2 (Medulla) has the loop of Henle of all the nephrons. So they have appearance like stripes.
(iii) Urine, Urea

(iv) Nephron/Kidney tubule/Renal tubule
(v) 1. Ultrafiltration and 2. Selective reabsorption

(b) (i) Malpighian capsule



(ii) Myelinated neuron



3. (a) (i) 1. Urinary bladder
2. Ureter (left)
3. Prostate gland
4. Vas deferens/Sperm duct
5. Urethra
6. Testes
7. Scrotum
8. Epididymis

(ii) Fallopian tube/Oviduct
(iii) It protects testis and regulate temperature of testes for sperm.

(b) (i) Adrenalin
(ii) Insulin
(iii) Glucagon
(iv) Thyroxine
(v) Calcitonin
(vi) Adrenalin
(vii) Somatotropic Hormone (STH)
(viii) Gonadotropic Hormone (GTH)
(ix) Antidiuretic Hormone (ADH)
(x) Adrenalin

4. (a) (i) Ventricular systole
   (ii) Ventricle is contracting because both tricuspid and bicuspid valves are closed whereas both pulmonary semi-lunar and Aortic semi-lunar valves are open to pump the blood out of the two ventricles.
   (iii) 1. Pulmonary artery
   2. Aorta
   3. Bicupsid/Mitral valves
   4. Aortic semi-lunar valve
   5. Tricuspid valves
   (iv) Oxygenated blood flows through part '2'.
   (v) Allow deoxygenated blood to flow from right ventricle to lungs and prevents its back flow.
   (vi) Pericardium

   (b) (i) Part A = Cerebrum, Part B = Cerebellum Part C = Medulla oblongata.
   (ii) Cerebrum: It is the site of controlling memory, reasoning, thinking, perception, emotions and speech.
   Cerebellum: It maintains posture equilibrium and muscular co-ordination.
   Medulla Oblongata: It contains centre for cardiac, respiratory and vasomotor activities. It also co-ordinates reflexes for swallowing, coughing, sneezing and vomiting.
   (iii) Three protective membranes covering the brain are: duramater, piamater and arachnoid.
   (iv) The basic unit of brain is neuron.