

**ICSE 2023 EXAMINATION**  
**SPECIMEN QUESTION PAPER**  
**BIOLOGY**  
**(SCIENCE PAPER – 3)**

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*Maximum Marks: 80*

*Time allowed: Two hours*

*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.*

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*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**

*(Attempt all questions from this Section.)*

**Question 1**

Select the correct answers to the questions from the given options. (Do not copy the question. [15]

Write the correct answer only) :

- (i) A muscular wall is absent in:
- (a) Capillary
  - (b) Arteriole
  - (c) Venule
  - (d) Vein
- (ii) On which day of the menstrual cycle does ovulation take place?
- (a) 1st day
  - (b) 5th day
  - (c) 14th day
  - (d) 28th day

(iii) Ganong's Potometer is used to study:

- (a) Photosynthesis
- (b) Rate of uptake of water
- (c) Exosmosis
- (d) Guttation

(iv) The number of chromosomes in a human skin cell are:

- (a) 22
- (b) 23
- (c) 44
- (d) 46

(v) Cretinism and Myxedema are due to:

- (a) Hypersecretion of thyroxine
- (b) Hypersecretion of growth hormone
- (c) Hyposecretion of thyroxine
- (d) Hypersecretion of growth hormone

(vi) Light dependent phase of photosynthesis in green leaves takes place in:

- (a) Grana of chloroplast
- (b) Stroma of chloroplast
- (c) Nucleus of palisade cells
- (d) Cytoplasm of palisade cells

(vii) An example of a biodegradable substance is:

- (a) Aluminium
- (b) Paper
- (c) Plastic
- (d) Steel

(viii) The part that is cut in Vasectomy is:

- (a) Urethra
- (b) Oviduct
- (c) Fallopian tube
- (d) Vas deferens

(ix) Gestation period of human foetus is:

- (a) 40 days
- (b) 280 days
- (c) 280 weeks
- (d) 40 months

(x) The part of the human eye where the rods and cones are located is:

- (a) Iris
- (b) Retina
- (c) Sclera
- (d) Choroid

(xi) Organ of Corti is present in:

- (a) Utriculus
- (b) Sacculus
- (c) Cochlea
- (d) Incus

(xii) The outermost covering of the brain is:

- (a) Arachnoid
- (b) Piamater
- (c) Pericardium
- (d) Duramater

(xiii) Cytokinins are predominantly present in:

- (a) Meristematic tissues
- (b) Permanent tissues
- (c) Endodermis
- (d) Epidermis

(xiv) Marine fish when placed in tap water bursts because of:

- (a) Diffusion
- (b) Plasmolysis
- (c) Endosmosis
- (d) Exosmosis

(xv) Urine is carried from kidney to urinary bladder by:

- (a) Uterus
- (b) Urethra
- (c) Umbilical cord
- (d) Ureter

### Question 2

(i) Name the following:

[5]

- (a) The suppressed allele of a gene.
- (b) The knot like mass of blood capillaries in Bowman's capsule.
- (c) The mineral element required for the synthesis of thyroxine.
- (d) One gaseous compound that depletes the ozone layer.
- (e) The statistical study of human population.

(ii) 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) Soil water, Xylem, Root hair, Cortex
- (b) Tympanum, Incus, Malleus, Stapes
- (c) Pulmonary Vein, Left Ventricle, Aorta, Left auricle
- (d) Sperm, Urethra, Sperm duct, Epididymis
- (e) Aqueous humour, Optic nerve, Retina, Lens

- (iii) Match the items given in Column I with the most appropriate ones in Column II and rewrite the correct matching pairs. [5]

Column I	Column II
(a) Natality	1. DDT
(b) Soil pollutant	2. Death rate
(c) Starch test	3. Carbon monoxide
(d) Mortality	4. Iodine solution
(e) Air pollutant	5. Lime water
	6. Birth rate
	7. Growth rate

- (iv) Choose the odd one out from the following terms and name the category to which the others belong: [5]

- (a) Thyroid gland, Lacrimal gland, Pituitary gland, Adrenal gland.
- (b) Detergents, Sewage, X-rays, Oil spills
- (c) Spinal cord, Cerebrum, Pons, Cerebellum
- (d) Chloroplast, Cell wall, Large Vacuoles, Centrosome.
- (e) Auxin, Oxytocin, Gibberellin, Cytokinin

- (v) State the exact location of the following structures:

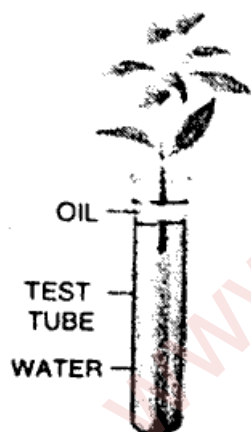
- (a) Thylakoids
- (b) Corpus callosum
- (c) Chordae tendinae
- (d) Prostate gland
- (e) Adrenal glands

## SECTION B

(Attempt any four questions from this Section.)

### Question 3

- (i) Define Guttation. [1]
- (ii) Give one difference between Lenticels and Stomata. [2]
- (iii) What is Parthenocarpy? Give one example. [2]
- (iv) State Mendel's Law of Segregation. [2]
- (v) Study the diagram given below and answer the questions that follow: [3]

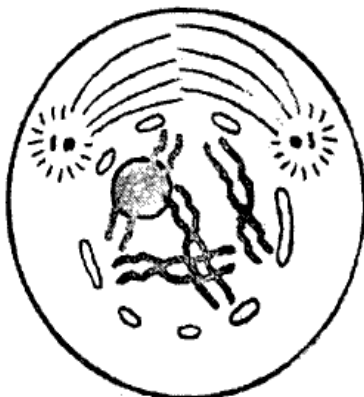


- (a) Name process being studied in the above experiment.
- (b) What will you observe with regard to the level of water when this setup is placed in bright sunlight.
- (c) Mention one adaptation found in plants to overcome the process mentioned in (i).

### Question 4

- (i) Expand the abbreviation – A T P. [1]
- (ii) Name any two nitrogenous bases. [2]
- (iii) Addition of salt to pickles prevents the growth of bacteria. Explain by giving two suitable reasons. [2]
- (iv) Mention two adaptations in leaves to perform Photosynthesis. [2]

- (v) Given below is a diagram representing a stage during the mitotic cell division. [3]  
Answer the following questions:



- (a) Identify the stage.  
(b) Give a suitable reason for your answer in (a).  
(c) Name the stage that follows the one shown in the diagram.

#### Question 5

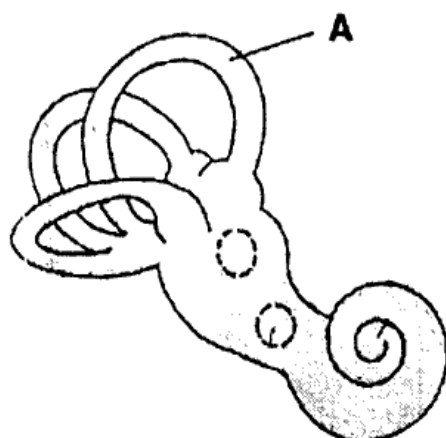
- (i) Define – Excretion. [1]  
(ii) What is the significance of Hepatic Portal Vein? [2]  
(iii) State two functions of vitreous humour. [2]  
(iv) Which gland secretes Glucagon? What is its effect on blood sugar level? [2]  
(v) Draw a neat labelled diagram to show the internal structure of a human kidney. [3]

#### Question 6

- (i) Define – Gene. [1]  
(ii) Differentiate between Cell wall and Cell membrane with reference to permeability. [2]  
(iii) State the function of Medulla Oblongata with a suitable example. [2]  
(iv) Colour blindness is generally seen in males. Explain. [2]

(v) Study the diagram given below and answer the questions that follow:

[3]



- Identify the structure.
- In which part of the ear is it located?
- What is the function of the part marked A?

#### Question 7

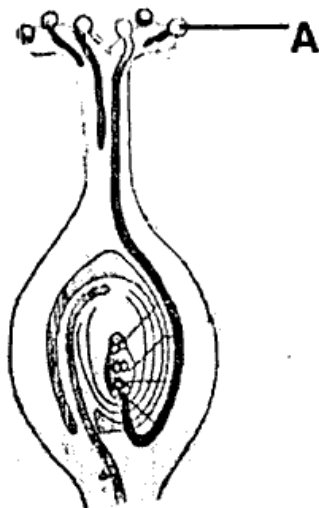
- Explain – Accommodation of eye. [1]
- Give two reasons for a sharp rise in world human population. [2]
- Mention two functions of Amniotic fluid. [2]
- What is the difference between Phenotype and Genotype? [2]
- Draw neat labelled diagrams showing the cross sections of an Artery and a Vein. [3]

#### Question 8

- Define – Pollution. [1]
- Plants droop on a hot day even though the soil is well watered. Explain. [2]
- Differentiate between Menarche and Menopause. [2]
- State two harmful effects of acid rain. [2]



- (v) The diagram given below shows a type of tropism. Answer the questions that follow: [3]



- (a) Name the type of tropism.  
(b) Define the above mentioned tropism.  
(c) Give an example of a stimulant that helps in the growth of the part marked – A.