

# ICSE CLASS 10

# BIOLOGY

# SAMPLE PAPER

(As Per Re-reduced Syllabus - For ICSE 2021 Exam)

## Time - 2 Hours

Max. Marks: 80

[5]

[5]

- You will not be allowed to write during the first 15 minutes. Utilize this time to read 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 four questions from Section B.
- The intended marks for the question or parts of questions are given in the brackets ().

### Section – A (40 Marks)

#### Attempt all questions from this section

#### **Question 1**

- a) Name the following:
  - (i) The part of the brain associated with memory.
  - (ii) The ear ossicle which is attached to the tympanum.
  - (iii) Structure where photo phosphorylation takes place.
  - (iv) The hormone secreted by alpha cells of pancreas.
  - (v) The process of conversion of ADP into ATP during photosynthesis.
- **b**) State whether the following statements are true of false. If false, rewrite the correct form of the statement by changing the last word only:
  - (i) Dry seeds when submerged in water swell up due to endosmosis.
  - (ii) Activation of chlorophyll takes place by absorbing protons.
  - (iii) Blood flows in spurts through the arteries.
  - (iv) The innermost vascular membrane of brain is called pia mater.
  - (v) Dynamic balance of the body is maintained by vestibules.
- c) Choose the correct alternative from the choice given below for each statement: [5]
  - (i) Cretinism and Myxoedema are due to
    - (A) Hypersecretion of thyroxine (B) Hyposecretion of GH
    - (C) Hyposecretion of thyroxine (D) Hypersecretion of GH
  - (ii) Which of the following is not a natural reflex action?
    - (A) Knee Jerk (B) Salivation at the sight of food
    - (C) Peristalsis (D) Sneezing

(iii) Aqueous chamber is present between

(A) Lens and retina	(B) Iris and lens

(C) Cornea and Iris (D) Cornea and lens

(iv) The value present at the origin of Aorta

(A) Mitral valve	(B) Tricuspid valve
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- (C) Aortic semilunar valve (D) None of these
- (v) Chromosomes get aligned at the centre of the cell during :

(A) Metaphase	(B) Anaphase
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(C) Prophase (D) Telophase



- (d) Below is an example of a certain structure and its special functional activity. [5]
   Example: Ribosome and protein synthesis. On a similar pattern complete the following:
  - (i) Prostate gland and \_\_\_\_\_.
  - (ii) Aqueous humour and \_\_\_\_\_.
  - (iii) Cochlea and \_\_\_\_\_.
  - (iv) Choroid and \_\_\_\_\_.
  - (v) Superior venacava and \_\_\_\_\_.
- (e) State the location of the following:
  - (i) Seminal vesicle (ii) Yellow spot (iii) Chlorophyll
  - (iv) Papillary muscles (v) Epididymis.

[5]

- (f) Account for the following:
  - (i) Insulin is injected into the body of a diabetic patient and not given orally.
  - (ii) On sprinkling salt on grass growing in a lawn, the grass is killed.
  - (iii) Excessive transpiration results in the wilting of the leaves.
  - (iv) Gametes have haploid number of chromosomes.
  - (v) The organ which produces urea.
- (g) Given below are the five sets of five terms each. In each case, rewrite the terms in logical sequence as directed at the end of each statement: [5]
  - (i) Cochlea, tympanum, auditory canal, ear ossicles, oval window (conduction of sound).
  - (ii) Lens, cornea, pupil, retina, aqueous humour (pathway of entry of light).
  - (iii) lens, pupil, <u>conjunctiva</u>, yellow spot, cornea.
  - (iv) Sperm duct epididymis, seminiferous tubules, urethra, ejaculatory duct (conduction of sperm).
  - (v) Axon endings, dendrites, cyton, dendron, axon (neuron structure).



- (h) Give one point in difference between the following pairs based on what is indicated in brackets.
  - i. Plasmolysis and deplasmolysis (tonocity)
  - ii. RUBP and NADP (Expended form)
  - iii. Cobalt chloride paper and Goat's bladder. (Process where it is used)

- iv. Renal Cortex and Renal medulla (which part of the nephron lies in them)
- v. Grave's disease & Cushing's syndrome (Cause)

#### Section – B (40 Marks)

#### Attempt any four questions from this section

## **Question 2**

(a) The figure given below represents an experiment to demonstrate a particular aspect of photosynthesis. The alphabet 'A' represents a certain condition inside the flask.



- i. What is the aim of the experiment?
- ii. In what manner do the leaves 1 and 2 differ at the end of the starch test?
- iii. What is the function of KOH is the flask? Name an alternative chemical that can be used instead of KOH.
- iv. What is the role of the leaf labelled '2'.

#### (b) Draw a neat diagram of internal structure of eye and label the following parts: [5]

(i) Sclera (ii) Vitreous humour (iii) Cornea (iv) Ciliary muscles (v) Pupil

# **Question 3**

#### [10]

[5]

a) Name the plant hormone responsible for bringing about the following changes.

- i. Check transpiration by closing stomata.
- ii. Delays ageing in plants.
- iii. Root induction in stem cuttings.
- iv. Cell elongation.

- **b**) Answer the following questions.
- i. How do blood banks preserve blood for emergency use?
- ii. Give the significance of crossing over in the meiotic cell division.
- iii. Name the enzyme required for the fixation of CO<sub>2</sub> in Calvin cycle.
- iv. What is cataract?



# **Question 4**

(a) Give	biological reasons for the following statements.	[5]
i) In	some xerophytes, leaves are modified into spines.	
ii) T	here is frequent urination in winter than in summer.	
iii) E	thylene is widely used in agriculture.	
iv) S	ome women have facial hair like beard and moustache.	
v) C	arbon-monoxide is dangerous when inhaled.	
( <b>b</b> ) Give	n below are certain functional activities of specific structures. Name the	
struc	ture:	[5]
(i)	The carrier of hereditary unit.	
(ii)	Site of spermatogenesis.	
(iii)	Maintain dynamic balance of body.	
(iv)	Carry deoxygenated blood of the body.	
(v)	Promotes guttation.	
Question	5	[10]
(a) A potted	plant is taken in order to prove a factor for photosynthesis. The potted pla	ntic

(a) A potted plant is taken in order to prove a factor for photosynthesis. The potted plant is kept in the dark of 24 hours. One of the leaf was covered with black paper in the centre. The potted plant was then placed in sunlight for few hours.

- (i) What aspect of photosynthesis was being tested?
- (ii) Why was the plant placed in the dark before beginning the experiment?
- (iii) During the starch test why was the leaf –
  (1) Boiled in water
  (2) Boiled in methylated spirit.
- (iv) Write a balanced chemical equation to represent the process of photosynthesis.

(**b**) In each set of terms, identify the odd term and name the category to which other three belong:

- (i) Haemoglobin, glucagon, idopsin, rhodopsin.
- (ii) Thyroid gland, pituitary gland, salivary gland, adrenal gland.
- (iii) Thymine, pepsin, cytosine, adenine.
- (iv) Transpiration, photosynthesis, phagocytosis, guttation.
- (v) Cerebellum, thalamus, hypothalamus, cerebrum.

## **Question 6**

[10]

i) What is meant by power of accommodation of the eye? Name the muscles of the eye responsible for the same.

- ii) What is the functional difference between the choroid and sclerotic layer of the eye?
- iii) Mention 2 harmful effect of the acid rain.
- iv) Draw a neat, labelled diagram of a Malpighian capsule.
- v) Name the important nitrogenous wates present in urine

