Time : 3 Hours
Maximum Marks : 70

BIOLOGY
ISC
Sample Question Papers

Self Assessment Paper 1

(Candidates are allowed additional 15 minutes for only reading the paper.
They must NOT start writing during this time.)

General Instructions :

*This paper comprises **TWO PARTS** – Part I and Part II.*
*Answer **all** questions.*

*Part I contains **one** question of 20 marks having four sub-parts.*
Part II consists of Sections A, B and C.
*Section A contains **seven** questions of **two** marks each.*
*Section B contains **seven** questions of **three** marks each, and*
*Section C contains **three** questions of **five** marks each.*
Internal choices have been provided in two questions in Section A, two questions in Section B and in all three questions of Section C.

PART - I

(Answer all questions.) **(20 Marks)**

Question 1.

(a) **(i)** Name the largest herbarium of the world. **[8×1]**

AI **(ii)** Name the organelle of the cell called as "suicidal bags".

(iii) What would be the pressure potential (Ψ_p) of a flaccid cell ?

(iv) Name a limbless animal.

(v) Name the central element present in chlorophyll.

AI **(vi)** Define light compensation point.

(vii) What is the function of contractile vacuole ?

(viii) Which part of the ear functions to maintain body balance ?

(b) **Each of the following questions has four choices. Choose the correct option in each case :** **[4×1]**

(i) Which component provides energy for various metabolic activities:

(1) ER **(2)** Chloroplast
(3) Ribosomes **(4)** Mitochondria

AI **(ii)** The loss of water in the form of water droplets from hydathodes (small pores)

(1) Transpiration **(2)** Evaporation
(3) Transcription **(4)** Guttation

(iii) On maturity an ovule forms a :

(1) Seed **(2)** Endosperm
(3) Endocarp **(4)** Embryo sac

(iv) The inner layer of the human eye ball includes the :

(1) Lens and choroid **(2)** Retina
(3) Sclera and cornea **(4)** Sclera

(c) Give significant contribution of each of the following scientists : **[2 × 1]**

(i) Robert Brown
(ii) Peter Mitchell

(d) Define the following : **[3 × 1]**

(i) Sexual dimorphism
(ii) Pseudocarp
(iii) Threshold stimulus in muscle contraction

(e) Answer the following : **[3 × 1]**

AI **(i)** Give one difference between smooth endoplasmic reticulum (SER) and rough endoplasmic reticulum (RER).

(ii) What kind of lining does trachea have ?

(iii) Why a haemodialysing unit is called artificial kidney ?

PART - II

SECTION - A (14 Marks)

(Answer all questions.)

Question 2. **[2]**

AI **(a)** Draw a labelled diagram of renal corpuscle.

OR

(b) Draw a labelled diagram of synapse.

Question 3. **[2]**

Differentiate between epigynous and hypogynous flower. Give one example of each.

Question 4. **[2]**

AI Write the structural similarities of chloroplasts and mitochondria.

Question 5. **[2]**

State four physiological functions / uses of ethylene.

Question 6. **[2]**

Write a short note on archegonium.

Question 7. **[2]**

Define :

(a) Water potential and solute potential.

OR

(b) Mycorrhiza.

Question 8. **[2]**

(a) Give four differences between anabolism and catabolism.

OR

(b) Give four differences between cell organelles and cell inclusions.

SECTION - B (21 Marks)

(Answer all questions.)

Question 9 [3]

(a) Who proposed the five kingdom classification ?

(b) Name the five kingdoms and the main criteria used by him for classification of organism.

Question 10 [3]

(a) Describe the types of roots found in Cycus and Pinus.

OR

(b) Describe tendons and ligaments ? Also, give their functions.

Question 11 [3]

Define the following :

(a) Monoecious plant

(b) 'Source' and 'sink' in phloem transport

(c) Nymph

Question 12 [3]

Draw the diagram of three structural elements of endoplasmic reticulum.

Question 13

(a) Describe any three factors affecting photosynthesis and giving an idea of the law of limiting factors.

OR

(b) Describe any three external factors affecting the process of respiration.

Question 14 [3]

Give the functions of the following :

(a) Nephridium

(b) Annual rings

(c) ADH (Antidiuretic Hormone)

Question 15 [3]

Give the cause and one symptom of following diseases : [3]

(i) Ulcers

(ii) Asthma

(iii) Diabetes mellitus

SECTION - C (15 Marks)

(Answer all questions.)

Question 16 [5]

(a) Draw labelled diagrams of haplontic, diplontic and haplo-diplontic life cycle of plants, with examples.

OR

(b) Draw diagrams to show various type of placentation in the flowers as seen in T.S and V.S.

Question 17 [5]

(a) Describe an experiment to show that CO_2 is essential for photosynthesis.

OR

(b) (i) What are the conditions necessary for fixation of atmospheric nitrogen by *Rhizobium*. What is the their role in N_2 -fixation ?

(ii) Why is that in certain plants deficiency symptoms appear first in younger parts of the plant while in others they do so in mature organs ?

AI Question 18 **[5]**

(a) Why a red muscle fibre works for a prolonged period while a white muscle fibre suffers from fatigue after a shorter work ?

OR

(b) Explain diagrammatically the process of reabsorption and secretion of major substances at different parts of the nephron.

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