

BIOLOGY (Theory)

[Time allowed: 3 hours]

[Maximum marks:70]

General Instructions:

- (i) *All questions are compulsory.*
- (ii) *This question paper consists of four sections A, B, C and D. Section A contains 8 questions of one mark each, Section B is of 10 questions of two marks each, Section C is of 9 questions, of three marks each and Section D is of 3 questions of five marks each.*
- (iii) *There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks and all the three questions of 5 marks weightage. A student has to attempt only one of the alternatives in such questions.*
- (iv) *Wherever necessary, the diagrams drawn should be neat and properly labelled.*

Q1. Cucurbits and papaya plants bear staminate and pistillate flowers. Mention the categories they are put under separately on the basis of the type of flowers they bear. (1)

Ans: Papaya is dioecious because the staminate and pistillate flowers are borne in two different plants while cucumber is monoecious because it bears both staminate and pistillate flowers in the same plant.

Q2. A garden pea plant (A) produced inflated yellow pod, and another plant (B) of the same species produced constricted green pods. Identify the dominant traits. (1)

Ans: The trait to produce inflated yellow seeds is dominant over the trait producing constricted green seeds.

Q3. Write what do phytophagous insects feed on. (1)

Ans: As the name suggests, phytophagous insects feed on plants.

Q4. What is the interaction called between *Cuscuta* and shoe flower bush? (1)

Ans: The interaction between *Cuscuta* and shoe flower bush is called parasitism. Here *Cuscuta* is the parasite which infests the shoe flower bush and derives nutrition from it.

Q5. When do the oogenesis and the spermatogenesis initiate in human females and males respectively? (1)

Ans: Oogenesis starts in females in their foetal stage while spermatogenesis in males starts at puberty.

Q6. How does smoking tobacco in human lead to oxygen deficiency in their body? (1)

Ans: Smoking increases carbon monoxide (CO) content in blood and reduces the concentration of haem bound oxygen. This causes oxygen deficiency in the body.

Q7. State the significance of the study of fossils in evolution. (1)

Ans: With the help of fossils we can know the morphological details of the organisms in the past and can relate them to the organisms in the present to understand the process of evolution. We can also trace the time at which the organism existed.

Q 8. Name the following: (1)

- (a) The semi-dwarf variety of wheat is high-yielding and disease-resistant.
- (b) Any one inter-specific hybrid mammal.

Ans: (a) Sonalika and Kalyan Sona are the semi-dwarf varieties of wheat that are high-yielding and disease resistant.
(b) Mule is an interspecific hybrid mammal.