

(English Version)

- Instructions :**
1. *This question paper consists of four Parts – A, B, C and D. Part – D consists of two Sections. Section – I and Section – II.*
 2. *All the Parts are compulsory.*
 3. *Draw diagrams wherever necessary. Unlabelled diagrams or illustrations do not attract any marks.*

PART – A

Answer the following questions in **one** word or in **one** sentence **each** :

(10 × 1 = 10)

- 1) What are Hermaphrodites?
- 2) Mention the asexual reproductive structure in sponges.
- 3) What is Euchromatin?
- 4) Why DNA replication is called semiconservative?
- 5) Name the microbe used in the production of citric acid.

- 6) What is Micro-Injection?
- 7) Define Mortality.
- 8) Give an example for gaseous cycle.
- 9) Define Endemism.
- 10) What is Eutrophication?

PART – B

Answer **any five** of the following questions in **3 to 5** sentences **each**, wherever applicable : **(5 × 2 = 10)**

- 11) List the hormones produced by the placenta during pregnancy.
- 12) Write any two simple principles to prevent sexually transmitted diseases.
- 13) Mention four symptoms of Down's syndrome.
- 14) What is Incomplete dominance? Give an example.
- 15) Write any two factors affecting Hardy – Weinberg principle.
- 16) What is the significance of selectable marker in cloning vector?
- 17) Codon AUG has dual function – Justify.
- 18) What are the criteria of DNA to act as a genetic material?

PART – C

Answer **any five** of the following questions in about **40 to 80 words each**, wherever applicable : **(5 × 3 = 15)**

- 19) Name the types of vegetative propagules in following plants :
- a) Potato
 - b) Ginger
 - c) Bryophyllum.
- 20) What is pollination? Mention any four features of wind pollinated flowers.
- 21) What is Infertility? Give reasons for infertility in humans.
- 22) What are analogous organs? Give any two examples.

QUESTION ANSWERS FOR A UNIT

- 23) Mention the types of carcinogens with an example for each.
- 24) Write the meaning of following terms :
- a) Explant
 - b) Totipotency
 - c) Somaclones.
- 25) Draw neat labelled diagram of simple stirred tank bioreactor.
- 26) Mention three causes for biodiversity loss.

PART – D

SECTION – I

Answer **any four** of the following questions in about **200 to 250 words each**, wherever applicable : **(4 × 5 = 20)**

- 27) Describe the structure of pollen grain of angiosperms.
- 28) Draw neat labelled diagram of human male reproductive system.
- 29) Explain Mendel's experiment to describe inheritance of one gene with reference to height of pea plants.

- 30) List the salient features of Human Genome.
- 31) Name the diseases caused by following organisms :
- a) Rhino virus. (1)
 - b) Epidermophyton. (1)
 - c) Salmonella typhi. (1)
 - d) Wuchereria malayi. (1)
 - e) Plasmodium vivax. (1)
- 32) What is Bee-Keeping? Write any four points for successful Bee-Keeping?

SECTION – II

Answer **any three** of the following questions in about **200 to 250 words each**, wherever applicable : (3 × 5 = 15)

- 33) Describe the biogas plant with a neat labelled diagram.
- 34) a) What is Biopiracy? (2)
b) How ADA deficiency cured by gene therapy? (3)
- 35) a) What is Ecological succession? (1)
b) Write types of plant succession. (2)
c) Represent pyramid of number in grassland ecosystem. (2)

36) Explain mutualism with examples.

37) Write a brief account of electrostatic precipitator with a neat labelled diagram.



