

(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 **one** sentence **each** :

(10 × 1 = 10)

- 1) What is implantation?
- 2) Write the restriction site of EcoRI enzyme.
- 3) Define 'Totipotency'.
- 4) Mention the role of Methanobacterium in rumen of cattle.

- 5) What is Foetal Ejection Reflux?
- 6) Define 'Saltation'.
- 7) Name the type of antibodies produced during allergy.
- 8) What are Eurythermal organisms?
- 9) Define Biomagnification.
- 10) Write the name of toxic substance responsible for fever and chill in Malaria.

PART – B

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

- 11) What are homogametes and heterogametes?
- 12) Mention any two examples of evolution by anthropogenic action.

- 13) Distinguish between homozygous and heterozygous plants.
- 14) What is Innate Immunity? Mention any two types of innate immunity barriers.
- 15) Which are the Important components of Poultry Farm Management?
- 16) Write the methods to introduce alien DNA into Host cells.
- 17) Define Endemism. Name any two regions of accelerated habitat loss in India.
- 18) Invasion of alien animal species eliminates the native animal species – Give two examples.

PART – C

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

- 19) Mention the vegetative propagules of the following plants :
- a) Water Hyacinth (1)
 - b) Agave (1)
 - c) Banana (1)
- 20) Draw a neat labelled diagram of T.S. of young Anther.
- 21) Describe Haplodiploid sex determination system in Honey Bees.
- 22) State Hardy-Weinberg principle of genetic equilibrium. Write any four factors affecting the equilibrium.
- 23) Write a short note on ecosystem services.
- 24) Sketch the diagrammatic representation of the Replication of Retrovirus inside an animal cell.
- 25) What is Ecological succession? How Hydrarch succession is different from Xerarch succession?

26) Draw a neat labelled diagram of plasmid pBR322.

PART – D

SECTION – I

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

27) Draw and describe the structure of a matured embry sac of angiosperms.

28) Draw a neat labelled, diagrammatic sectional view of female reproductive system.

29) Explain the inheritance of one gene with reference to stem height of Garden Pea plant.

30) a) What are the features of an ideal contraceptive? **(2)**

b) Mention the natural methods of contraception. **(3)**

- 31) Explain the following terms :
- a) Inbreeding depression (1)
 - b) Inter specific hybridisation (1)
 - c) Biofortification (1)
 - d) Micropropagation (1)
 - e) Somaclones (1)
- 32) Explain the regulation of Lac operon in absence and presence of Lactose as an Inducer.

SECTION – II

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

- 33) Oswald Avery and others have continued Griffith's transforming principle to prove DNA as genetic material – Substantiate.
- 34) Describe the role of Microbes in sewage treatment plant.
- 35) One of the applications of biotechnology is to get pest resistant plants – Justify the statement with reference to Bt. cotton.
- 36) a) What are Ectoparasites and Endoparasites? (2)
- b) List any three parasitic adaptations in animals. (3)

37) Write a note on the following :

- a) Radio active wastes (3)
- b) Joint forest management. (2)



