BIOLOGY

Subject Code : 36 (NS)

(Kannada and English Versions)

Time : 3 Hours 15 Minutes] [Total No. of questions : 37] [Max. Marks : 70

(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) How many chromosomes are there in meiocytes of human beings?

2) Name the inducer which regulates the switching on and off of the lac operon.

3) Which type of R.N.A. polymerase enzyme transcribes precursor m.R.N.A.?

4) Name the part of the flower which develops into the fruit after fertilization.

5) Write the scientific name of the fungus which produce cyclosporin A.

6) What are Poineer species?

7) Which bacteria is commonly found in the anaerobic sludge during sewage treatment?

8) Name the International treaty which controls the emission of ozone depleting substances.

9) Define endemism.

10) What are Euryhaline organisms?

PART – B

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

11) Name the scientist who foundout D.N.A. and what was the name given by him?

12) Write the accessory ducts found in male reproductive system.

13) Mention the genotype of the parents when their children are with A, B, AB, O blood groups.

14) Name the two hormone releasing I.U.Ds.

15) What are the two types of disorders of humans where the Karyotype is 47?

16) Name the two primates those were existing in 15 mya

17) Mention the two diseases resisted by mungbean through mutation breeding.

18) Write the two basic amino acid residues which are rich in histones.

PART – C

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

19) Mention the asexual reproductive structures of the following:
   a) Penicillium
   b) Hydra
   c) Sponges.

20) **Sketch and label Miller's Experiment.**

21) Name the diseases caused by the following organism:
   a) Rhino virus
   b) Wuchereria bancrofti
   c) Haemophilus influenzae.

22) **Define Infertility. Write two assisted reproductive technology to overcome infertility.**

23) Schematically represent phosphorus cycle.

24) What is ecological succession? How Hydrarch succession is different from that of xerarch succession?

25) Alien species invasion caused decline or extinction of indigenous species. Justify the statement by giving three examples.

26) **Define Autogamy. Write the two different kinds of flowers that exhibit autogamy.**

PART – D

SECTION – I

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

27) Explain **a mature embryo sac** with a neat labelled diagram.

28) **Schematically** represent the inheritance of two genes in pea plants with **reference** to seed colour and shape

29) Mention five salient features of human genome project.

30) a) Define immunity and name two different types of immunity. **(3)**

b) Draw a neat labelled diagram of structure of an antibody molecule. **(2)**

31) With reference to tissue culture explain the following terms:

a) Explant

b) Totipotency

c) Micropropagation

d) Somaclones

e) Somatic hybrids.

32) **Explain briefly how the transgenic animals benefit the human beings.**

SECTION – II

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

33) Draw a neat labelled diagram of sectional view of female reproductive system.

34) Explain the biogas plant with a neat labelled diagram.

35) Mention the population interactions exist among the following

a) Abingdon tortoise and goats in galapagos islands **(1)**

b) Cuckoo lays eggs in crow's nest **(1)**

c) Sea-anemone and clown fish **(1)**

d) Wasp laying eggs in fig fruit **(1)**

e) Orchid ophrys and bees. **(1)**

36) a) Differentiate Endonucleases and Exonucleases. **(2)**

b) Diagramatically represent recombinant D.N.A. technology. **(3)**

37) Write a note on the following:

a) Remedy for plastic waste **(2)**

b) Radio active wastes. **(3)**