

PART - I (BIO-BOTANY)**SECTION - 1**

1. **EcoRI cleaves DNA at:**
(a) GAATTC (b) AGGGTT
(c) TATAGC (d) GTATATC
2. **Pedogenesis refers to :**
(a) Population (b) Fossils
(c) Soil (d) Water
3. **Tectona grandis is coming under the family :**
(a) Dipterocarpaceae (b) Lamiaceae
(c) Ebenaceae (d) Fabaceae
4. **Deforestation means :**
(a) growing plants and trees in a pond.
(b) growing plants and trees in an area where there is no forest.
(c) removal of plants and trees.
(d) growing plants and trees in an area where the forest is removed.
5. **In which techniques Ethidium Bromide is used ?**
(a) Polymerised Chain Reaction
(b) Southern Blotting Techniques
(c) Agarose Gel Electrophoresis
(d) Western Blotting Techniques
6. **The first cell of male gametophyte in angiosperm is :**
(a) Nucleus
(b) Microspore
(c) Primary Endosperm Nucleus
(d) Megaspore
7. **The Dominant Epistasis ratio is:**
(a) 9: 3: 4 (b) 9: 3: 3: 1
(c) 9: 6: 1 (d) 12: 3: 1
8. **Crosses between the plants of the same variety are called ____ .**
(a) intravarietal (b) interspecific
(c) intergeneric (d) intervariatal

SECTION - 2

9. What is Mellitophily ?
10. What are the enzymes you can use to cut terminal end and internal phosphodiester bond of nucleotide sequence?
11. What is myrmecophily ?
12. Draw a pyramid from following details and name the type of pyramid.
Quantities of organisms are given Hawks-50, Plants-1000, Rabbit and Mouse 250 + 250. Pythons and Lizard 100 + 50 respectively.
13. How are microbial inoculants used to increase the soil fertility ?
14. Give definitions for organic farming.

SECTION - 3

15. List out the functions of tapetum.
16. What is the difference between missense and nonsense mutation ?
17. What do you know about the word pBR 322 ?
18. What is CCS ?
19. Distinguish habitat and niche.

SECTION - 4

20. (a) Give a detailed account on parthenocarpy, add a note on its significance.

OR

(b) Differentiate incomplete dominance and co-dominance.

21. (a) Write the applications of plant tissue culture.

OR

(b) What are the King and Queen of spices ? Write their uses.

PART - II (BIO-ZOOLOGY)

SECTION - 1

22. A mRNA molecule is produced by :

- (a) Duplication
- (b) Replication
- (c) Translation
- (d) Transcription

23. Cyclosporin-A is an immunosuppressive drug produced from :

- (a) *Penicillium notatum*
- (b) *Aspergillus niger*
- (c) *Trichoderma polysporum*
- (d) *Monascus purpureus*

24. Which period was called as "Age of fishes" ?

- (a) Devonian
- (b) Permian
- (c) Ordovician
- (d) Triassic

25. Competition between species leads to :

- (a) Amensalism
- (b) Extinction
- (c) Symbiosis
- (d) Mutation

26. Which one of the following are at high risk extinction due to habitat destruction ?

- (a) Amphibians
- (b) Mammals
- (c) Echinoderms
- (d) Birds

27. Which of the following phenotypes is not possible in the progeny of the parental genotypic combination

$I^A I^O \times I^A I^B$?

- (a) A
- (b) AB
- (c) B
- (d) O

28. PCR proceeds in three distinct steps governed by temperature, they are in order of :

- (a) Annealing, Synthesis, Denaturation
- (b) Denaturation, Annealing, Synthesis
- (c) Denaturation, Synthesis, Annealing
- (d) Synthesis, Annealing, Denaturation

29. The matured sperms are stored in the ____ .

- (a) Epididymis
- (b) Seminiferous tubules
- (c) Seminal vesicle
- (d) Vas deferens

SECTION - 2

30. What is parthenogenesis? Give example.

31. What is surrogacy ?

32. Differentiate template strand from coding strand.

33. Who disproved Lamarck's theory of acquired characters ? How ?

34. Write the symptoms of filariasis.

35. What does gene therapy mean ?

SECTION - 3

36. Differentiate foeticide from infanticide.

37. Autoimmune disease is a misdirected immunity response. Justify.

38. When does antibiotic resistance develop ?

39. Differentiate Natality from Mortality.

40. In the XY chromosomal system of sex determination, males have only one 'X' chromosome, whereas females have two. How does the organism compensate for this dosage differences between the sexes ?

SECTION - 4

41. (a) Explain the structure of Human Ovum with a neat labelled diagram.

OR

(b) Write the salient features of Human Genome Project.

42. (a) Explain the structure of immunoglobulin with suitable diagram.

OR

(b) Write an essay on radioactive waste management.

