

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

1. The unit for measuring ozone thickness is :
(a) Watt (b) Dobson
(c) Kilo (d) Joule
2. Fruit colour in squash is an example of :
(a) Complementary genes
(b) Recessive epistasis
(c) Inhibitory genes
(d) Dominant epistasis
3. Size of pollen grain in myosotis is ____ micrometer.
(a) 10 (b) 2000
(c) 20 (d) 200
4. **Assertion (A)** : Gamma rays are generally used to induce mutation in wheat varieties.
Reason (R) : Because they carry lower energy to non-ionize electrons from atom.
(a) (A) is wrong, (R) is correct
(b) (A) and (R) are correct
(c) (A) and (R) are wrong
(d) (A) is correct, (R) is wrong
5. The wavelength of photosynthetically active radiation lies between the range of :
(a) 200 – 700 nm
(b) 300 – 700 nm
(c) 500 – 700 nm
(d) 400 – 700 nm
6. Match the following :

Column – I	Column - II
(1) Cowpea	(i) Pusa Sadabahar
(2) Wheat	(ii) Pusa Swarnim
(3) Chilli	(iii) Himgiri
(4) Brassica	(iv) Pusa Komal

(a) (1)-(iv), (2)-(i), (3)-(ii), (4)-(iii)
(b) (1)-(ii), (2)-(iv), (3)-(i), (4)-(iii)
(c) (1)-(ii), (2)-(i), (3)-(iv), (4)-(iii)
(d) (1)-(iv), (2)-(iii), (3)-(i), (4)-(ii)
7. The native of groundnut is :
(a) North America (b) Philippines
(c) Brazil (d) India
8. Plasmids are:
(a) tiny bacteria
(b) circular protein molecules
(c) confer resistance to antibiotics
(d) required by bacteria

SECTION – 2

9. Give the names of the scientists who rediscovered Mendelism.
10. What is called phyto remediation?
11. Mention the names of the enzymes required for Genetic engineering.
12. What are embryoids ?
13. Pyramid of energy is always upright. Give reasons.
14. How are microbial inoculants used to increase the soil fertility?

SECTION - 3

15. What is genetic mapping ? Write its uses.
16. Give an account on Cryopreservation.
17. Distinguish between habitat and niche.
18. How do forests help in maintaining the climate?
19. Draw the structure of an ovule and label its parts.

SECTION - 4

20. (a) What is single cell protein ? Mention its applications.

OR

- (b) What are Millets ? What are its types ? Give an example for each type.

21. (a) Bring out the inheritance of chloroplast gene with an example.

OR

- (b) Discuss the steps involved in the microsporogenesis.

PART - II (BIO-ZOOLOGY)

SECTION - 1

22. The Androgen Binding Protein (ABP) is produced by :

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|---------------------|------------------|
| (a) Sertoli cells | (b) Leydig cells |
| (c) Pituitary gland | (d) Hypothalamus |

23. The relationship between sucker fish and shark is :

- | | |
|------------------|-----------------|
| (a) Commensalism | (b) Parasitism |
| (c) Predation | (d) Competition |

24. Paedogenetic parthenogenesis occurs in :

- | | |
|---------------|----------------|
| (a) Solenobia | (b) Aphis |
| (c) Gall fly | (d) Honey bees |

25. Down's Syndrome is a genetic disorder which is caused by the presence of an extra chromosome number :

- | | |
|--------|--------|
| (a) 13 | (b) 20 |
| (c) 23 | (d) 21 |

26. Exo-erythrocytic schizogony of Plasmodium takes place in :

- | | |
|-------------|----------------|
| (a) Stomach | (b) RBC |
| (c) Liver | (d) Leucocytes |

27. The term 'Biogenesis' was coined by :

- | | |
|-------------|-------------------|
| (a) Oparin | (b) Thomas Huxley |
| (c) Haldane | (d) Henry Bastian |

28. Project Tiger was launched in the Jim Corbett National Park in the State of ____ in 1973.

- | | |
|------------|-----------------|
| (a) Assam | (b) Uttarakhand |
| (c) Kerala | (d) Gujarat |

29. Adenosine deaminase deficiency causes :

- | | |
|---------------|-----------------|
| (a) SCID | (b) Haemophilia |
| (c) Hepatitis | (d) AIDS |

SECTION - 2

30. Mention any two goals of the human genome project.
31. Define Oligopotency with an example.
32. Draw a neat labelled sketch of Human Ovum.
33. Which is referred as Industrial alcohol ? Why is it referred so ?
34. What is meant by Sameer ?
35. Write the risk factors for cervical cancer.

SECTION - 3

36. Write a short note on Coprolites.
37. Placenta is an endocrine tissue - Justify.

38. Recently E-waste created dangerous effects in the environment. How will you find solution to avoid the effects due to these wastes ?
39. Write the differences between r-selected and K-selected species.
40. By which event PCR help in RNA replication? Write in brief about the chemical reaction of that process.

SECTION - 4

41. (a) How can we contribute to promote biodiversity conservation ?
OR
(b) What are Hardy-Weinberg's assumptions on evolution ? Explain them.
42. (a) Classify the drugs on the basis of their effects.
OR
(b) Explain the different kinds of syngamy in living organisms.

