

PART - I (BIO-BOTANY)

SECTION – 1

1. **Virus free plants are developed from: -**
 - (a) Cell suspension culture
 - (b) Organ culture
 - (c) Meristem culture
 - (d) Protoplast culture
2. **Some of the major species cultivated in Agroforestry for commercial use: -**
 - (a) Erythrina, Albizzia
 - (b) Malaivembu, Kadambu
 - (c) Acacia, Azadirachta Indica
 - (d) Sesbania, Acacia
3. **If a homozygous red flowered plant is crossed with a homozygous white flowered plant, then the off-spring will be: -**
 - (a) All red flowered
 - (b) Half white flowered
 - (c) Half red flowered
 - (d) All white flowered
4. **Match the following: -**

(1) Stenobathic	(i) Salinity
(2) Stenoecious	(ii) Depth of water/habitat
(3) Stenohaline	(iii) Food
(4) Stenophagic	(iv) Habitat selection

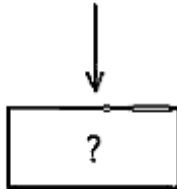
 - (a) (1) - (iv), (2) - (i), (3) - (iii), (4) - (ii)
 - (b) (1) - (iii), (2) - (i), (3) - (ii), (4) - (iv)
 - (c) (1) - (ii), (2) - (i), (3) - (iv), (4) - (iii)
 - (d) (1) - (ii), (2) - (iv), (3) - (i), (4) - (iii)
5. **First cell of Male gametophyte in angiosperms is: -**
 - (a) Primary endosperm
 - (b) Microspore
 - (c) Megaspore
 - (d) Nucleus
6. **Which is frequently used as reporter of expression?**
 - (a) GMF
 - (b) Circular protein
 - (c) GFP
 - (d) PLA
7. **The Ozone layer of troposphere is called: -**
 - (a) Middle Ozone
 - (b) Ozone Shield
 - (c) Bad Ozone
 - (d) Good Ozone
8. **Name the plant which is pest resistant and saline tolerant: -**
 - (a) Sonalika
 - (b) Triticale
 - (c) Raphanobrassica
 - (d) Atomita-2

SECTION – 2

9. Define Cybrid.
10. Write any four uses of Seedball.
11. What are the objectives of clean development mechanism?
12. Define - Organic farming.
13. Write the Botanical name and family of Nilavembu. Write any one of its uses.
14. Name the enzymes involved in genetic engineering.

SECTION - 3

15. In 4 o'clock plant
 Pale green leaved plant × Dark green leaved plant
 (Male) (Female)



Explain the type of inheritance.

16. What is p^{BR322} plasmid?

17. What is Green House Effect? Draw the relative contributions of greenhouse gases.

18. Give an account on cryo preservation.

19. Write the three differences between Habitat and Niche.

SECTION – 4

20. (a) Explain the different mode of entry of pollen tube into the ovule.

OR

(b) What is gene mapping and write its uses.

21. (a) How to protect the ecosystem?

OR

(b) Ramu and Somu are farmers. Ramu cultivated the crops by self-fertilization method. Somu cultivated the crops from mixed population.

(i) Who will get new variety?

(ii) Write the advantages and disadvantages of their selection.

PART - II (BIO-ZOOLOGY)

SECTION - 1

22. Match the following: -

- | | |
|--|------------------------|
| (1) Copper releasing IUD | (i) LNG-20 |
| (2) Hormone releasing IUD | (ii) Lippes's loop IUD |
| (3) Non-medicated IUD | (iii) Saheli |
| (4) Mini pills | (iv) Multiload-375 |
| (a) (1) - (iv), (2) - (i), (3) - (ii), (4) - (iii) | |
| (b) (1) - (iv), (2) - (ii), (3) - (i), (4) - (iii) | |
| (c) (1) - (iv), (2) - (i), (3) - (iii), (4) - (ii) | |
| (d) (1) - (i), (2) - (iv), (3) - (ii), (4) - (iii) | |

23. Why *Saccharomyces Cerevisiae* is more suitable for production of recombinant interferons than *E. coli*?

- E. coli* cannot be used in biofermentor.
- E. coli* does not have suitable plasmid for the production of proteins.
- E. coli* does not have the machinery for glycosylation of proteins.
- E. coli* is not easily available for the production of proteins.

24. Which one of the following is true to gastrulation?

- Formation of multicellular structure from Zygote
- Formation of specific organs from germ layers
- Formation of three germ layer embryo from single layer embryo
- Attachment of blastocyst to the uterine wall

25. Identical twins are produced when the following condition is satisfied: -

- Two sperms are fertilizing one egg
- Two sperms are fertilizing two eggs
- One sperm is fertilizing two eggs
- One sperm is fertilizing one egg

26. ELISA is mainly used for:-

- Selecting plants having desired traits
- Detection of mutations
- Detection of pathogens
- Selecting animals having desired traits

27. Assertion (A): Genetically engineered Bt-cotton is disease resistant type.

Reason (R): Cry-toxin produced in the plant has specific activities against free living fungi.

- (a) Both (A) and (R) are true, but (R) does not explain (A)
- (b) (A) is wrong; (R) is correct
- (c) Both (A) and (R) are wrong
- (d) (A) is true but (R) is wrong

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

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

29. The difference between DNA sugars and RNA sugars is: -

- (a) One oxygen atom excess in deoxyribose sugars
- (b) One oxygen atom less in ribose sugars
- (c) Two oxygen atoms less in ribose sugars
- (d) One oxygen atom less in deoxyribose sugars

SECTION - 2

30. What is Ovulation? In which day of menstrual cycle, it takes place?

31. Write the cause of Down's Syndrome.

32. What are Operons? How many operon groups are present in *E. coli*?

33. Write any two differences between active and passive Immunity.

34. Which is referred to as Industrial alcohol? Why?

35. What is the most important application of human stem cells?

SECTION - 3

36. What is known as "Let-Down" reflex?

37. Write a note on "Amniocentesis".

38. Name the hormone secreted by Thymus gland and mention two functions of that hormone.

39. Write about gene banks.

40. A character present in grandfather goes to grandson through daughter. Draw flowchart for this pattern of Inheritance.

SECTION - 4

41. (a) Write about the methodologies of HGP.

OR

(b) Explain the evolutionary path of Man.

42. (a) Write short notes on: -

- (i) Population Density
- (ii) Natality and Mortality

OR

(b) Write about the effects of chemicals used in the field of Agriculture.