

Vivekananda Vidhyashram Matric Hr. Sec School

Tirunelveli

Class: 12 STD

Pre-Half Yearly Test -2024

BOTANY

Total marks 100

A. Choose the best answer from following Questions:

20 X 1 = 20

1. First cell of male gametophyte in angiosperm is _____
(a) Microspore (b) Megaspore (c) Nucleus (d) Primary Endosperm Nucleus
2. Arrange the layers of anther wall from locus to periphery
(a) Epidermis, middle layers, tapetum, endothecium
(b) Tapetum, middle layers, epidermis, endothecium
(c) Endothecium, epidermis, middle layers, tapetum
(d) Tapetum, middle layers endothecium epidermis
3. Pick out the mismatched pair:
(a) Entomophily – Insects (b) Malacophily – Mammals
(c) Cheiropterophily – Bats (d) Omithophily – Birds
4. The type of endosperm noticed in Hydrilla seed
(a) Ruminant endosperm (b) Nuclear endosperm
(c) Cellular endosperm (d) Helobial endosperm
5. Changing the codon AGC to AGA represents _____
(a) mis-sense mutation (b) non-sense mutation
(c) frameshift mutation (d) deletion mutation
6. How many map units separate two alleles A and B, if the recombination frequency is 0.09?
(a) 900 cM (b) 90 cM (c) 9 cM (d) 0.9 cM
7. Number of chromosomes (2n) in Ophioglossum is _____
(a) 1226 (b) 1622 (c) 1262 (d) 2126
8. During cross over, chiasma occurs between
(a) Sister chromatids of non-homologous chromosomes
(b) Non-sister chromatids of non-homologous chromosomes
(c) Non-sister chromatids of homologous chromosomes

(d) Sister chromatids of homologous chromosomes

9. Which of the following one is used as a Biosensors?

- (a) Electrophoresis (b) Bioreactors (c) Vectors (d) Electroporation

10. An antibiotic gene in a vector usually helps in the selection of

- (a) Competent cells (b) Transformed cells (c) Recombinant cells
(d) None of the above

11. Which of the following person coined the term biotechnology?

- (a) Ernst Hoppe (b) Stanley Cohen (c) Ian Wilmet (d) Karl Ereky

12. Self-ligation is prevented by _____

- (a) DNA Polymerase (b) Helicase (c) Alkaline phosphate (d) DNA lipase

13. One of the chief reasons among the following for the depletion in the number of species making endangered is _____

- (a) over hunting and poaching (b) green house effect
(c) competition and predation (d) habitat destruction

14. Deforestation does not lead to _____

- (a) Quick nutrient cycling (b) Soil erosion
(c) alternation of local weather conditions
(d) Destruction of natural habitat weather conditions

15. Total number of forestry extension centres in Tamil Nadu is _____

- (a) 16 (b) 32 (c) 18 (d) 51

16. Paddy, Wheat and Sorghum, etc., come under the category of cereals. All the members of cereals belong to which of the following family?

- (a) Fabaceae (b) Poaceae (c) Leguminoneae (d) Caesalpinaeae

17. The active principle trans-tetra hydro canabial is present in _____

- (a) Opium (b) Curcuma (c) Marijuana (d) Andrographis

18. Tamarindus indica is indigenous to _____

- (a) Tropical African region (b) South India, Sri Lanka
(c) South America, Greece (d) India alone

19. Pigeon pea is the common name for.

- (a) *Vigna radiate* (b) *Vigna mungo* (c) *Cajanus cajan* (d) *Sorghum vulgare*

20. The plant source of Marijuana is _____

- (a) *Andrographis paniculata* (b) *Phyllanthus maderaspatensis*
(c) *Cannabis sativa* (d) *Papaver somniferum*.

B. Answer any TEN from following questions

10 X 2 = 20

21. Draw and label the structure of a typical pollen grain

22. Write the equivalent botanical terms for the following words / sentences.

- (a) Landing platform of pollen (b) Ovarian cavity
(c) Megasporangium (d) Basal swollen part of pistil

23. Mention the types of ovule seen in the members of

- (a) Cactaceae (b) Leguminosae (c) Polygonaceae (d) Primulaceae.

24. Who coined the term crossing over? When does the crossing over occurs in a cell?

25. Compare point mutation with chromosomal mutation

26.. What is meant by synaptonemal complex?

27. What are the benefits of Genetically Modified plants?

28. What is Bio pharming?

29. Point out any two disadvantages of Bt cotton?

30. What is ozone layer? Why it is essential?

31. What is carbon sequestration?

32. Give definitions for organic farming?

33. Write the cosmetic uses of Aloe.

C. Answer any TEN from following questions

10 X 3 = 30

34. What is Heterostyly? Give example.

35. List any three advantages of micro propagation.

36. What are the ways through which the pollen tube enters into ovule?

37. Draw and label the structure of a mature embryo sac of angiosperm

38. Point out any three salient features of the chromosomal theory of inheritance.

39. Enumerate the uses of Genetic mapping.

40. Give an account on colchicine.

41. What are secondary metabolites? Give two examples.

42. Classify restriction enzymes based on their mode of action.
43. Mention any three sources of carbon dioxide emission.
44. What are the major activities carried out by forestry extension centres?
45. Which is called the “King of Bitters”? Mention their medicinal importance.
46. Enumerate the uses of turmeric.

D. Answer the following questions:

6 X 5 =30

47. Enumerate the characters of anemophilous flowers (or)

Explain any five types of angiospermic ovules

48. Describe the structure of a dicot seed. (or)

Draw a flow chart depicting the various types of ploidy.

49. List out the significance of ploidy. (or)

Describe the steps involved in recombinant DNA technology.

50. Explain in detail about various types of direct gene transfer method (or)

Explain the stepwise preparation of Bio-pest repellent from the leaves of *Azadirachta indica*

51. List out the major effects of Ozone depletion. (or)

Write a comparative note on Carbon Foot Print (CFP).

52. What are millets? What are its types? Give example for each type. (or)

What are psychoactive drugs? Add a note of Marijuana and Opium