Higher Secondary Second Year

BOTANY

Model Question Paper – 1

Time : 2.30 hours Marks: 70

Section – I 15x1=15

Answer all the questions:-

1. The number of families in dicotyledonae are…
a) 132 b) 146
c) 165 d) 182

2. Anthers are monothecous in
a) Solanaceae b) Euphorbiaceae
c) Malvaceae d) Musaceae

3. In mature sieve elements the pores in the sieve plate are blocked by a substance called…
a) Pectin b) Renin
c) Callose d) Elictin

4. The determination of the age of a tree by counting the annual rings is called
a) Palynology b) Dendrochronology
c) Chronology d) Pathology

5. The terminal part of a chromosome is called…
a) Sarcomere b) Telomere
c) Kinetochore d) Centromere

6. The unit of genetic map is
a) Morgan b) Centimeter
c) Nanometer d) Locus

7. Allopolyploid is induced in plant by the following treatment chemical called

a) Quinine b) Morphine
c) Colchicines d) Citric acid

8. Insecticidal activity of Bacillus thuringiensis bacteria depends on a toxic protein called…

a) Basta b) Polyhydroxy butyrate
c) Delta endotoxin d) Camphor

9. The function of cytokinin is

a) Cell elongation b) Fruit initiation
c) Cell division d) differentiation

10. Enzyme pepsin is active in

a) Alkaline medium b) Neutral medium
c) Acidic medium d) Basal medium

11. Which of the following is a 5c compound?

a) Glucose b) Fructose
c) Phospho glyceric d) RUBP

12. Medicine used for treating heart disease

a) Digoxin b) Quinine
c) Ephedrine d) Ginseng

13. Bio fertilizer used successfully in India rice fields

a) Gracilaria b) Laminaria
c) Azolla d) Acacia

14. In Ixora coccinea the stamens are

a) Mono adelphous b) Syngenesious
c) Epipetalious d) Diadelephous

15. The root hairs originate from

a) Trichonblaste b) Endodermis
c) Hypodermis d) Pericycle

Section – II 6x2=12

Answer any six of the following. Question No.22 is compulsory:-

16. What is Epicalyx?
17. What is Pseudo stem?
18. Draw and label amphicribral vascular bundle.
19. What are sclereids?
20. Define crossing over.
21. Define vernalisation.
22. Draw and label lampbrush chromosome.
23. Define humulin.
24. What is the function of DNA ligase?

Section – III 6x3=18

Answer any six of the following. Question No.27 is compulsory:-

25. Name the ornamental plants of Malvaceae
26. What are lenticels?
27. Write any three significance of ploidy
28. What is gene gum method?
29. Write the process by which Co2 is evolved during respiration
30. Write a note on tracheids.
31. Write the economic importance of musaceae.
32. Differentiate C3 and C4 pathways
33. Write the economic importance of groundnut.

Section – IV 5x5=25

Answer all the following:-

34. Explain Clitoria ternatea in technical terms

(Or)

Differentiate heart wood and sapwood.

35. Explain Bentham and Hooker's natural system of classification.

(Or)

Explain gene mutation.

36. Draw and label T.S of Monocot stem.

(Or)

What is SCP? What are the uses of SCP?

37. Explain Glycolysis (flow chart only).

(Or)

Write the aims of plant breeding

38. Explain C2 cycle (flow chart (or) explanation).

(Or)

Explain special types of Chromosomes.

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Model Question Paper – 2

Time : 2.30 hours Marks: 70

Section – I 15x1=15

Answer all the questions:-

1. Mounted herbarium specimens are sprayed with fungicide
a) Zinc sulphate b) Mercuric sulphate
c) Mercuric chloride d) Zinc chloride

2. Which plant is called madder plant?
a) Coffea arabica b) Cinchona officinalis
c) Rubia tinctoria d) Morrinda tinctoria

3. Lateral roots originate from
a) Epidermis b) Cortex
c) Endodermis d) Pericycle

4. Lenticels are lens shaped openings seen in
a) Epidermis b) Cortex
c) Cork d) Cambium

5. The term chromosome was introduced by
a) Bridges b) Waldeyer
c) Balbiani d) Flemming

6. The following codons are called nonsense codons
a) UUA, UCA, UGU b) UCC, ACU, CCU
c) UAA, UAG, UGA d) ACU, CCC, GUC

7. The ability of callus to develop into shoot or root is

a) De-differentiation b) Differentiation
c) Re-differentiation d) Totipotency

8. The joining of DNA fragments of vector and donor is
a) Fusion b) Cloning
c) Splicing d) Molecular scissor

9. One of the following organisms is SCP(Single Cell Protein)
a) Nostoc b) Rhizobium
c)Agaricus d) Spirulina

10. The active Enzyme in alkaline medium is
a) Diastase b) Pepsin
c) Tripsin d) Zymase

11. The essential component for the formation of chlorophyll
a) Mg b) Fe
c) Cl d) Mn

12. Removal of water molecule from the substrate is called
a) Reduction b) Oxidation
c) Enolation d) Phosphorylation

13. Synthetic auxin used to eradicate weeds is
a) PAA b) IAA
c) 2, 4-D d) NAA

14. Binomial name of vilvum
a) Acalypha indica b) Aegle marmelos
c) Cissus quadrangularis d) Mimosa pudica

15. Leaves of the following plant is used instead of tea
a) Cola nitida b) Ilex paragurensis
c) Cephalis d) Vinca rosea

Section – II 6x2=12

Answer any six of the following. Question No.22 is compulsory:-

16. Write a note on the inflorescence of Cocos nucifera.
17. What is tyloses?
18. Write a note on the functions of epidermal tissue system.
19. Write about the uses of gene mapping.
20. Name the fibre yielding plants of Malvaceae.
21. Write a note on uses of SCP.
22. Differentiate photo respiration from dark respiration
23. Write a note on phytochromes and flowering.
24. What is heterosis?

Section – III 6x3=18

Answer any six of the following. Question No.27 is compulsory:-

25. Write a note on significance of herbarium.
26. Differentiate heartwood from sapwood.
27. Draw the structure of t-RNA
28. Draw the structure of open vascular bundle.
29. Write a note on economic importance of musaceae
30. Explain the concept of tissue culture.
31. Explain significance of Pentose phosphate pathway.
32. Write a note on the physiological effects of gebberalin.
33. Write the economic importance of rice

Section – IV 5x5=25

Answer all the following:-

34. Explain the salient features of ICBN

(Or)

Draw and label T.S of Monocot root

35. Explain Ixora coccinea in technical terms

(Or)

Differentiate dicot stem from Monocot stem.

36. Write a short note on mutagenic agents.

(Or)

Explain C4 cycle (explanation (Or) flow chart)

37. Write an essay on recombinant DNA technology

(Or)

Differentiate cyclic from non-cyclic photo phosphorylation.

38. Write a note on physiological effects of auxin and cytokinin.

(Or)

What is the role of BT-toxin in crop protection against pest? Explain the action of biopesticide.

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Model Question Paper – 3

Time : 2.30 hours Marks: 70

Section – I 15x1=15

Answer all the questions:-

Choose the most suitable answer from the given four alternatives and write the option code and the corresponding answer.

1. The advanced family in monocotyledons is.
a) Musaceae b) Arecaceae
c) Orchidaceae d) Zingiberaceae

2. 'Pyrethrum' is obtained from
a) Eclipta prostrata b) Tagetus
c) Helianthus annus d) Chrysanthemum cocsineum

3. Genera plantarum of Bentham and Hooker was published in
a) a single volume b) two volumes
c) three volumes d) three volumes

4. Phloem parenchyma is absent in
a) Pteridophyte b) Monocots
c) Gymnosperms d) Dicots

5. During the formation of Periderm, a few layers of meristematic tissue are formed in the cortex. This is called
a) Cork b) Phellogen
c) Phelloderm d) Phellem

6. Intercalary meristem is prominently found in
a) Nymphaea b) Helianthus

c) Grasses d) Clitoria

7. According to Bateson and Punnet, in Lathyrus odaratus how many percent of the test cross progeny were recombinants?
a) 7 b) 1
c) 12 d) 6

8. Cistron is a unit of…
a) Recombination b) Function
c) Mutation d) Genetic map

9. The pH of the plant tissue culture medium is adjusted to
a) 5.8 b) 7.6
c) 8.2 d) 8.5

10. One of the following organisms is a SCP
a) Nostoc b) Rhizobium
c) Mushroom d) Spirulina

11. These enzymes catalyze the cleavage of specific covalent bonds and removal of groups without hydrolysis are called
a) Ligases b) Hydrolases
c) Lyases d) Transferase

12. Who postulated 'Law of limiting factor'?
a) Calvin b) Hatch-slack
c) Blackmann d) Dickens

13. Cytokinin found in the endosperm of coconut is
a) 2, 4-D b) Zeatin
c) ABA d) GAI

14. Induced mutation yields a new variety called
a) Rust resistant wheat b) Atomita-2 rice
c) Drought resistant maize d) Vitamin-A rich rice

15. The strongest painkiller is obtained from

a) Ginseng b) Morphine

c) Quinine d) Ephedrine

Section – II 6x2=12

Answer any six of the following. Question No.22 is compulsory:-

16. What is syngenesious stamen?
17. Write the systematic position of musaceae.
18. What is differentiation?
19. What are tyloses?
20. Draw the four morphogenic types of chromosomes and label them
21. Give the binomials of at least two monocot transgenic plants.
22. What is holoenzyme?
23. What is Richmond Lang effect?
24. What is humulin?

Section – III 6x3=18

Answer any six of the following. Question No.27 is compulsory:-

25. Define biomedicine. Give one example.
26. What is Papilionaceous corolla?
27. Bring out any three merits of Bentham and Hooker's classification of plants.
28. Explain different types of meristems based on their position.
29. Draw and label the parts of a T.S of a dicot leaf.
30. Write any three significance of ploidy.
31. Write the algal organisms used for SCP production.
32. Write the differences between photo respiration and dark respiration.
33. Write the physiological effects of Cytokinin.

Section – IV 5x5=25

Answer all the following:-

34. Discuss the outline of Bentham and Hooker's classification of plants. (Flow chart (or) explanation).

(Or)

Describe Musa paradisiaca in technical terms.

35. Describe Vascular tissue system.

(Or)

Differentiate the Vascular bundles of the dicot stem from that of monocot stem.

36. Write an account on the structure of RNA and its types.

(Or)

Write the economic importance of cotton.

37. Write the basic concepts of plant tissue culture.

(Or)

Write an essay on DNA recombinant technology.

38. Write short notes on Ganong's high screen experiments.

(Or)

Draw the flow chart of Glycolysis