1. TAXONOMY OF ANGIOSPERMS

Three Mark Questions

1. Write the objectives of classification of plants? **Page No-01**
2. What are the defects of artificial system of classification? **Page No-01**
3. What are the aims of biosystematics? **Page No-03**
4. What is type specimen? **Page No-04**
5. What is called author citation? Give an example? **Page No-05**
6. What is ambiguous name (or) nomen ambigum? **Page No-05**
7. What is tautonym? Give example? **Page No-05**
8. What is polypetalae? **Page No-08**
9. Write short notes on Monchlamydeae? **Page No-10**
10. Write the systematic position of Laurineae? **Page No-11**

Malvaceae

11. Mention the systematic position of Malvaceae? **Page No-13**
12. What is epicalyx? **Page No-14**
13. Write the three points comparing Androecium of Malvaceae and Solanaceae? **Page No-14,19**
14. Draw the floral diagram and formula of Hibiscus rosa-sinensis? **Page No-15**
15. Write any three food plants of Malvaceae? **Page No-16**
16. Give any three binomial name of cotton yielding plant in Malvaceae? **Page No-16**
17. Write any three medicinal plants of Malvaceae? **Page No-17**

Solanaceae

18. Give the systematic position of Solanaceae? **Page No-18**
19. Write the different types of inflorescence found in Solanaceae? Give example? **Page No-18**
20. Describe the gynoecium of members of Solanaceae? **Page No-19**
21. Draw the floral diagram and write the floral formula of Datura metal? **Page No-20**
22. What is Atropin? **Page No-21**
23. Write the binomial of any three medicinally useful plants in Solanaceae? **Page No-21**

24. Write any three binomials of food plants of Solanaceae? **Page No-21**

25. Name the alkaloids found in tobacco? **Page No-22**

Euphorbiaceae

26. Write the systematic position of Euphorbiaceae? **Page No-23**

27. Define Cladode? Give example? **Page No-23**

28. What are different types of inflorescence seen in Euphorbiaceae? Give example? **Page No-24**

29. Mention the binomial of two rubber plants of Euphorbiaceae? **Page No-27**

30. Draw the floral diagram of female and male flower of Riccinus communis? **Page No-26**

31. Write the uses of medicinal plants of Euphorbiaceae? **Page No-27**

Musaceae

32. Write the systematic position of Musaceae? **Page No-29**

33. What is pseudostem? How is it formed in Musa paradisiaca? **Page No-29**

34. What is Monocorpic perennial? Give example? **Page No-29**

35. What is polygamous? Give an example? **Page No- 29**

36. Draw the floral diagram and floral formula of Must paradisiaca? **Page No-31**

37. Explain the gynoecium of Musa paradisiaca? **Page No-32**

2. PLANT ANATONOMY

1. What is called stellate parenchyma ? Give example? **Page No-36**

2. Draw the diagram for angular collenchyma and label the parts? **Page No-37**

3. Draw and label the diagram of lamellar/angular/lacunate collenchymas? **Page No-37**

4. Differentiate sclereids from fibres? **Page No-37&38**

5. What is surface fibres? **Page No-38**

6. What are trichoblasts? **Page No-42**

7. Draw the structure of Bicollateral vascular bundle and label the parts? **Page No-43**

8. Draw the structure of open vascular bundle and label the parts? **Page No-43**

9. What is Rhizodermis? **Page No-46**

10. What are casparian strips? **Page No-46**

11. What are called passage cells? **Page No-46**

12. What is protoxylem lecuna? **Page No-52**

13. What is Eustele? **Page No-54**

14. What is hypodermis? **Page No-54**

15. Write a short note on Bundle Cap? **Page No-54**

16. What are the functions of veins in a leaf? **Page No-58**

17. Differentiate palisade parenchyma from spongy parenchyma? **Page No-59**

18. What is accessory cell? **Page No-59**

3. CELL BIOLOGY & GENETICS

1. Draw and label the parts of Acrocentric chromosome? **Page No-62**

2. What is Balbiani ring? **Page No-63**

3. Mention double minutes chromosomes? **Page No-63**

4. What is one gene one polypeptide chain hypothesis? **Page No-64**

5. What is coupling? **Page No-66**

6. What is Repulsion? **Page No-67**

7. What is crossing over? **Page No-68**

8. Write the significance of crossing over? **Page No-68**

9. What are the uses of gene mapping? **Page No-69**

10. What is lethal mutation? **Page No-71**

11. What is Biochemical mutation? Give example? **Page No-71**

12. Differentiate autopolyploidy and allopolyploidy? **Page No-76**

13. What is Hypoploidy? State its two types? **Page No-77**

14. What is Okazaki fragment? **Page No-82**

15. Draw the structure of tRNA and label the parts? **Page No-83**

16. What are the functions of mRNA? **Page No-83**

17. What are isoacceptor tRNAs? **Page No-83**

18. What are the four arms found in the cloverleaf model of tRNA? **Page No-83**

4. BIOTECHNOLOGY

1. What is restriction endonuclease? **Page No-85**
2. What is DNA recombinant technology and Genetic engineering? **Page No-85**
3. What is Splicing? **Page No-86**
4. What is recombinant DNA? **Page No-86**
5. What is the importance of agrobacterium tumifaciences? **Page No-87**
6. What is the role of restriction enzymes in Bactria? **Page No-88**
7. What is transgenic plant? Write three transgenic monocot and dicot plants? **Page No-90**
8. What is differentiation and redifferentiation ? **Page No-94**
9. What are the culture media are used in tissue culture technique? **Page No-94**
10. What is embryogenesis? **Page No-96**
11. Define single cell protein? **Page No-100**
12. Why is SCP not popular for human consumption? **Page No-100**
13. What is PEG ? write its uses ? **Page No-100**
14. What is fusigenic agent? **Page No-100**
15. Write the name of SCP fungus ? **Page No-101**
16. Name the plant that can be developed from single cells? **Page No-101**

5. PLANT PHYSIOLOGY

1. What is called Thylakoids? **Page No-105**
2. What is photolysis of water? **Page No-106**
3. Differentiate PS-I and PS-II? **Page No-106**
4. What is "Z" scheme? **Page No-108**
5. Conditions under which cyclic photo phosphorylation occurs? **Page No-108**
6. Define dark reaction? **Page No-109**
7. Why are chloroplast in C_4 plants called dimorphic chloroplast? **Page No-112**
8. C_4 plants are photosythetically more efficient than C_3 plants why? **Page No-113**
9. Write any three differences between C_3 and C_4 pathway? **Page No-114**

10. What are hosts? **Page No-118**

11. Write short notes on Monotropha? **Page No-118**

12. How does drosera overcome the deficiency of nitrogen? **Page No-120**

13. Expand ATP and draw their structure? **Page No-124**

14. What is the function of aldolase in the process of glycolysis? **Page No-126**

15. What are isomers formed during glycolysis? **Page No-126**

16. What is oxidative phosphorilation ? **Page No-130**

17. The respiratory quotient for anaerobic respiration is infinity why? **Page No-134**

18. What is an ethanolic fermentation? **Page No-135**

19. Define Bolting? **Page No-141**

20. What is Richmond lang effect? **Page No-141**

21. What is a growth inhibitor? Give an example? **Page No-142**

22. What is long day, short day, day neutral plants ? Give example? **Page No-145**

6. BIOLOGY IN HUMAN WELFARE

1. Define mass selection? **Page No-149**

2. Define Biofertilizers? **Page No-152**

3. What is soil reclamation ? **Page No-153**

4. What is Morphine/Quinine/Digoxin/Ephedrine/Ginseng? **Page No-164**

5. What is humulin? **Page No-166**

6. What is Rice bran oil? Write any three use of it? **Page No-167**

BIO-BOTANY IMPORTANT QUESTIONS

1. TAXONOMY OF ANGIOSPERMS

10 MARKS

1. Discuss the outline of Bentham & Hooker Classification of Plants? **Page No-08**
2. Describe the Hibiscus rosa-sinensis in Botanical terms? **Page No-14**
3. Describe Datura metal in Botanical terms? **Page No-19**
4. Describe Riccinus communis in Botanical terms? **Page No-25**
5. Describe Musa paradisica in Botanical terms? **Page No-30**

5 MARKS

1. Write salient features of ICBN? **Page No-4**
2. Bring out the significance of Herbarium? **Page No-6**
3. Types of classification of plants? **Page No-1**
4. Merits and demerits of Bentham and Hook's classification? **Page No-10**
5. Economic importance of Malvaceae? **Page No-16**
6. Economic importance of Solanaceae? **Page No-21**
7. Describe the inflorescence of Euphorbiaceae (or) Describe cyathium inflorescence? **Pg No-23**
8. Economic importance of Euphorbiaceae? **Page No-27**
9. Economic importance of Musaceae? **Page No-32**

2. PLANT ANATONOMY

1. Write an essay on the epidermal tissue system? **Page No-41**
2. Describe the vascular tissue system? **Page No-42**
3. Describe the primary structure of a Monocot root (eg-Maize root)? **Page No-46**
4. Describe the primary structure of a Dicot root (eg-Bean root)? **Page No-48**
5. Describe the primary structure of a Monocot stem (eg-Maize stem)? **Page No-52**
6. Describe the primary structure of a Dicot stem (eg-Sunflower stem)? **Page No-54**
7. Write Anotomical differences between Dicot stem and Monocot stem? **Page No-56**

8. Describe the internal structure of a Dicot leaf (eg-Sunflower leaf)? **Page No-59**

5 Marks

1. Bring out the characters of meristematic cells? **Page No-34**
2. Explain different types of meristems based on their positions? **Page No-34**
3. Write short notes on tracheids? **Page No-38**
4. Write short notes on vessels (or) tracheae? **Page No-38**
5. Describe ground (or) fundamental tissue system? **Page No-43**
6. Distinguish the anatomy of dicot roots from monocot roots? **Page No-50**
7. Draw the transverse section of monocot root and label the parts? **Page No-47**
8. Draw the transverse section of dicot root and label the parts? **Page No-49**
9. Draw the transverse section of monocot stem and label the parts? **Page No-53**
10. Draw the transverse section of dicot stem and label the parts? **Page No-55**
11. Draw the transverse section of dicot leaf and label the parts? **Page No-59**
12. Differentiate the vascular bundles of the dicot stem from that of monocot stem? **P.No-52&54**
13. Write short notes on the vascular bundle of dicot stem? **Page No-54**
14. Write short notes on the vascular bundle of monocot stem? **Page No-52**

3. CELL BIOLOGY & GENETICS

10 Marks

1. Explain chromosomal aberration with the help of diagrams? **Page No-74**

5 Marks

1. Describe the structure of chromosomes? **Page No-61**
2. Explain the types of chromosomes? **Page No-62**
3. Write about special types of chromosomes? **Page No-63**
4. Describe about crossing over and it's significances? **Page No-68**
5. Explain about classification of mutation? **Page No- 71**
6. Write the significance of mutation? **Page No-72**
7. Write the flow chart of ploidy? **Page No- 76**

8. Describe about ploidy? **Page No-76**

9. Write the significance of ploidy? **Page No-77**

10. Explain DNA as a genetic material (or) Griffith experiment ? **Page No-79**

11. Explain structure of DNA Watson & Crick model? **Page No-79**

12. Describe replication of DNA ? **Page No-81**

13. Write short notes on structure of t-RNA? **Page No-83**

14. Write the different between DNA & RNA? **Page No-84**

4. BIOTECHNOLOGY

10 Marks

1. Describe recombinant DNA technology? **Page No-85**

2. Write an essay on plant tissue culture? **Page No-94**

3. Explain about protoplasmic fusion? **Page No-98**

5. Marks

1. Write about gene transfer in plant? **Page No-87**

2. How DNA is cut? **Page No-87**

3. Explain action of restriction enzymes? **Page No-88**

4. Write short notes on transgenic plants in food industry? **Page No-90**

5. Write the practical applications of genetic transformation? **Page No-91**

6. Write the applications of plants tissue culture? **Page No- 96**

7. Write short notes about SCP? **Page No-100**

5. PLANT PHYSIOLOGY

10 MARKS

1. Explain cycle & non cyclic photophosphorylation? **Page No-106**

2. Describe about dark reaction (or) Melvin calvin cycle (or) C_3 cycle (or) carbon fixation cycle? **Page No-109**

3. What is C_4 pathway (or) Hatch & Slack pathway explain? **Page No-112**

4. Explain C_2 cycle (or) photorespiration? **Page No-114**

5. Describe about Glycolysis (or) EMP pathway? **Page No-126**

6. Explain oxidative decarboxylation of pyruvic acid cycle (or) Kerb's cycle? **Page No-128**

7. Explain pentose phosphate pathway? **Page No-132**

5 MARKS

1. Significance of photosynthesis explain? **Page No-103**

2. Illustrate site of photosynthesis (or) structure of chloroplast? **Page No-104**

3. Explain electron transport system? **Page No-106**

4. Different between cyclic & non cyclic photophosphorylation? **Page No-108**

5. Different between C_3 & C_4 pathway? **Page No-114**

6. Draw the structure of overall scheme of respiration? **Page No-125**

7. Explain electron transport chain? **Page No- 130**

8. Significance of pentose phosphate pathway? **Page No-133**

9. Write about Physiological effects of Auxin ? **Page No-140**

10 .Write about Physiological effects of Gibberellibs ? **Page No-140**

11. Write about Physiological effects of Cytokinin? **Page No-141**

12. Write about Physiological effects of Ethylene? **Page No-142**

13. Write about Physiological effects of Abscisic acid ? **Page No-142**

14. What are the factors affecting photosynthesis? **Page No-116**

6. BIOLOGY IN HUMAN WELFARE

5 MARKS

1. Explain aims of Plant breeding? **Page No-148**

2. What are diseases resistance and diseases resistant varieties? **Page No-151**

3. What are benefits of biofertilizers? **Page No-153**

4. Write short notes on microbes in medicine? **Page No-166**