

Branch – BOTANY

PLANT DIVERSITY - II

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Question No.	Question	K Level	CO
1	Identify a species that is often called a "living fossil" (a) <i>Selaginella</i> (b) <i>Psilotum</i> (c) <i>Lycopodium</i> (d) <i>Equisetum</i>	K1	CO1
2	Name the protective structure of the sorus in <i>Nephrolepis</i> (a) Ligule (b) Elaters (c) Scales (d) Indusium	K1	CO1
3	State which pteridophyte has leaves resembling a clover, earning it the name "clover fern" (a) <i>Salvinia</i> (b) <i>Marsilea</i> (c) <i>Adiantum</i> (d) <i>Selaginella</i>	K1	CO2
4	Define the type of stele in which xylem is surrounded by phloem with a central pith (a) Siphonostele (b) Solenostele (c) Medullated protostele (d) Dictyostele	K2	CO2
5	Identify the structure from which the aril in <i>Podocarpus</i> is derived (a) Seed coat (b) Embryo (c) Ovule stalk (d) Pollen tube	K1	CO3
6	Which class of Gymnosperms has vessel elements in xylem? (a) Cycadopsida (b) Coniferopsida (c) Gnetopsida (d) Ginkgoopsida	K2	CO3
7	Name the plant structure in which the algal zone is a characteristic feature (a) Normal root (b) Coralloid root (c) Stem (d) Rachis	K1	CO4
8	Select the medicinal use of the genus <i>Ginkgo biloba</i> (a) Improving memory and circulation (b) Timber (c) Resin extraction (d) Food only	K2	CO4
9	Which geological period does <i>Rhynia</i> belong to? (a) Carboniferous (b) Devonian (c) Silurian (d) Triassic	K1	CO5
10	Name the feature of the Carboniferous Coal Measures that provides evidence for (a) Coral reefs (b) Desertification (c) Glacial landscapes (d) Ancient swampy forests	K2	CO5

Cont...

Question No.	Question	K Level	CO
11.a.	Describe the structure of the synangium in <i>Psilotum</i> with a labeled diagram.	K2	CO1
	(OR)		
11.b.	Explain the anatomy of the <i>Equisetum</i> stem and its adaptation for photosynthesis.		
12.a.	Illustrate and demonstrate the strobilus of <i>Selaginella</i> , showing how its structure relates to its reproductive function.	K3	CO2
	(OR)		
12.b.	Draw and demonstrate the vegetative features of <i>Salvinia</i> and explain their adaptations to an aquatic.		
13.a.	Give a summary of the general characteristics of Gymnosperms.	K4	CO3
	(OR)		
13.b.	Explain the reproductive structures of <i>Cupressus</i> and illustrate them with a labeled diagram.		
14.a.	Evaluate the reproductive structures of the male cone in <i>Cycas</i> in relation to its role in reproduction.	K5	CO4
	(OR)		
14.b.	Illustrate and assess how the structural features of a <i>Gnetum</i> ovule support its reproductive strategy.		
15.a.	Give an account of the structural features of <i>Lepidodendron</i> .	K5	CO5
	(OR)		
15.b.	Summarize and evaluate the reproductive structures of <i>Williamsonia</i> , discussing their evolutionary significance.		

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

Question No.	Question	K Level	CO
16	Describe the Reimers (1954) classification of Pteridophytes and its significance.	K2	CO1
17	Differentiate the structural parts of the <i>Marsilea</i> sporocarp and examine their role in reproductive success.	K4	CO2
18	Examine the various stages of the <i>Araucaria</i> life cycle and explain the functional significance of each morphological and reproductive phase.	K4	CO3
19	Evaluate the structure of male and female reproductive organs in <i>Pinus</i> with suitable diagrams.	K4	CO3
20	Assess the divisions of the geological time scale and explain their importance in understanding palaeobotany.	K5	CO5

Z-Z-Z

END