25BOP102 / 22BOP102N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025
(First Semester)

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	According to Reimers (1954), Pteridophytes were divided into ---- divisions, identify them correctly (a) Two (b) Three (c) Four (d) Five	K1	CO1
2	Which modern method is used to clarify evolutionary relationships in Pteridophytes? (a) Paleobotany only (b) Molecular phylogenetics (c) Embryology only (d) Morphological comparison	K2	CO2
3	Which feature is regarded as the forerunner of seed habit? (a) Heterospory (b) Apogamy (c) Retention of megaspore within megasporangium (d) Presence of endarch xylem	K1	CO1
4	Give the medicinal use of *Equisetum* --- (a) Antipyretic (b) Diuretic (c) Anti-inflammatory (d) Vermifuge	K2	CO1
5	Which of the following is a characteristic feature of gymnosperms? (a) Presence of tracheids in xylem (b) Seeds enclosed in the ovary (c) Motile sperm in all groups (d) Alternation of generations absent	K1	CO3
6	Predict the correct description of *Araucaria* (a) Herbaceous angiosperm (b) Deciduous gymnosperm (c) Evergreen gymnosperm (d) Annual moss	K2	CO3
7	Which of the following is found in the coralloid roots of *Cycas*? (a) Nitrogen-fixing cyanobacteria (b) Mycorrhizal fungi (c) Algae (d) Lichens	K1	CO3
8	Observe the reproductive system of *Pinus* (a) Dioecious (b) Hermaphrodite (c) Monoecious (d) Apomictic	K2	CO3
9	During which era was *Williamsonia* abundant? (a) Paleozoic (b) Mesozoic (c) Cenozoic (d) Precambrian	K1	CO5
10	Interpret the role of leaf margin analysis in palaeobotany. It serves as an indicator of ---- (a) Soil fertility (b) Photosynthetic efficiency (c) Evolutionary age (d) Climatic conditions	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	Describe the structure of synangium in *Psilotum* with a labeled diagram.	K2	CO1
	(OR)		
11.b.	Explain the reproductive structures of *Nephrolepis.*		
12.a.	Compare the gametophytic development and fertilization of *Selaginella.*	K4	CO3
	(OR)		
12.b.	Explain the key vegetative structures of *Salvinia* and their adaptations to an aquatic.		
13.a.	Examine the vegetative features of *Cupressus* with a labeled diagram.	K4	CO3
	(OR)		
13.b.	Outline the structure of the ovule and aril in *Podocarpus* and their role in reproduction.		
14.a.	Summarize the distinguishing features between *Cycas* and *Pinus.*	K5	CO4
	(OR)		
14.b.	Explain the economic importance of Gymnosperms with suitable examples.		
15.a.	Describe morphology and anatomy of the stem of *Rhynia.*	K5	CO5
	(OR)		
15.b.	Evaluate the structural and reproductive features of *Lyginopteris* in relation to its 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	Give an account of the modes of reproduction in *Equisetum*, with suitable examples.	K2	CO1
17	Illustrate the types of steles in Pteridophytes with suitable diagrams and show how they demonstrate stelar evolution.	K3	CO2
18	Examine the basis of Sporne's Gymnosperm classification and identify its strengths and weaknesses.	K4	CO3
19	Evaluate the ovular structure of *Gnetum* in relation to its angiosperm-like features.	K5	CO4
20	Examine the Geological Time Scale serves as a tool in palaeobotany, highlighting both strengths and weaknesses.	K5	CO5

Z-Z-Z END