

**PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)**

**MSc DEGREE EXAMINATION MAY 2025  
(Third Semester)**

Branch - **BOTANY**

**ECOLOGY AND PHYTOGEOGRAPHY**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL questions carry EQUAL marks**

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Which of the following is an edaphic factor in ecology? (a) Wind speed (b) Soil pH (c) Altitude (d) Solar radiation	K1	CO1
	2	Infer the term 'biotic' refers to (a) Non-living components of an environment (b) Climatic conditions (c) Physical features of the environment (d) Living organisms in an environment	K2	CO2
2	3	Which ecological pyramid is always upright? (a) Pyramid of biomass (b) Pyramid of numbers (c) Pyramid of energy (d) Pyramid of productivity	K1	CO1
	4	Show the correct sequence of a typical food chain. (a) Producers → Primary consumers → Secondary consumers → Decomposers (b) Primary consumers → Producers → Decomposers → Secondary consumers (c) Secondary consumers → Primary consumers → Producers → Decomposers (d) Decomposers → Producers → Primary consumers → Secondary consumers	K2	CO2
3	5	Which of the following is an analytical character of a community? (a) Species composition (b) Stratification (c) Species dominance (d) Periodicity	K1	CO1
	6	Infer the "k-selected" species is likely to have (a) Short lifespan and many offspring (b) High dispersal rate and little competition (c) Stable populations near carrying capacity (d) Rapid reproduction in unpredictable environments	K2	CO2
4	7	What is one of the guiding principles of environmental education? (a) Focus solely on technological solutions (b) Centralized education systems (c) Multidisciplinary approach (d) Encourage political discussions	K1	CO1
	8	Show the organization in India is responsible for biodiversity conservation. (a) WHO (b) NBA (c) UNESCO (d) UNEP	K2	CO2
5	9	Who proposed Age and Area Hypothesis hypothesis? (a) Charles Darwin (b) Joseph Dalton Hooker (c) Alfred Wegener (d) J.C. Willis	K1	CO1
	10	Show the vegetation type that is common along the coastal regions of Tamil Nadu. (a) Alpine Vegetation (b) Grasslands (c) Mangroves (d) Desert Scrub	K2	CO2

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**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Examine interactions between biotic and abiotic components in an ecosystem.	K4	CO4
		(OR)		
	11.b.	List the approaches and applications of Ecology.		
2	12.a.	Categorize the steps involved in nitrogen cycle.	K4	CO4
		(OR)		
	12.b.	Analyze the structure and function of an ecosystem with examples.		
3	13.a.	Explain the r and k selection strategies in population ecology.	K5	CO5
		(OR)		
	13.b.	Explain the structure of a community and how analytical and synthetic characters are used to analyze communities.		
4	14.a.	Explain the Man and Biosphere programme and its significance.	K5	CO5
		(OR)		
	14.b.	Asses the major challenges in natural resource management.		
5	15.a.	Elaborate the Age and Area Hypothesis and its significance.	K6	CO6
		(OR)		
	15.b.	Discuss the principles of Geographic Information System and its applications.		

**SECTION - C (30 Marks)**

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Classify the climate and its importance in ecology.	K4	CO4
2	17	Explain the phosphorus cycle and its role in ecosystems.	K5	CO5
3	18	Explain the concept of ecological succession and differentiate between primary and secondary succession with examples.	K5	CO5
4	19	Analyze the role of governmental and non-governmental organizations (NGOs) in promoting environmental conservation in India.	K4	CO4
5	20	Discuss the factors contributing to high levels of endemism and give examples of endemic species in India.	K6	CO6

Z-Z-Z

END