

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025  
(Third Semester)

Branch- ENVIRONMENTAL SCIENCE

**CLIMATE CHANGES AND MANAGEMENT**

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	The headquarters of the World Meteorological Organization (WMO) is located in: a) Paris                      b) Geneva                      c) New York                      d) Rome	K1	CO1
2	El Niño phenomenon is primarily associated with: a) Cooling of the Atlantic Ocean b) Warming of central and eastern Pacific Ocean c) Strengthening of Indian monsoon d) Melting of polar ice caps	K2	CO1
3	Which sector is the largest global contributor to greenhouse gas emissions? a) Transport                      b) Agriculture c) Energy                      d) Forestry	K1	CO2
4	Which of the following is an example of the enhanced greenhouse effect? a) Natural trapping of heat by the atmosphere b) Warming due to increased concentrations of CO <sub>2</sub> and CH <sub>4</sub> from human activities c) Seasonal variation in temperature d) Cooling effect of volcanic eruptions	K2	CO2
5	Certified Emission Reductions (CERs) are issued under: a) Kyoto Protocol's Clean Development Mechanism (CDM) b) Paris Agreement c) UNFCCC Green Climate Fund d) Montreal Protocol	K1	CO3
6	India's Intended Nationally Determined Contributions (INDCs) under the Paris Agreement include: a) 100% elimination of coal power by 2025 b) Creation of additional carbon sink of 2.5–3 billion tonnes of CO <sub>2</sub> equivalent by 2030 c) Zero net emissions by 2050 d) Removal of all carbon taxes	K2	CO3
7	Tsunamis are most often triggered by: a) Submarine earthquakes                      b) Heavy rainfall c) Coastal erosion                      d) Glacial melting	K1	CO4
8	Which of the following is a major environmental implication of forest fires? a) Increase in groundwater recharge                      b) Reduction in carbon emissions c) Loss of biodiversity and wildlife habitats                      d) Cooling of local atmosphere	K2	CO4
9	The Disaster Management Cycle includes: a) Only response and recovery b) Prevention, mitigation, preparedness, response, and recovery c) Relief and rehabilitation only d) Early warning and evacuation only	K1	CO5
10	Which high-risk group is most vulnerable during disasters like floods and cyclones? a) Middle-aged professionals                      b) Children, elderly, and disabled persons c) Tourists                      d) Local administrators	K2	CO5

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**SECTION - B (35 Marks)**Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	Explain the differences between weather and climate, and discuss why climatology is important for long-term environmental planning.	K2	CO1
	(OR)		
11.b.	Discuss the role of the India Meteorological Department (IMD) and WMO in monitoring and forecasting weather and climate.	K3	
12.a.	Explain the role of different economic sectors like energy, transport, agriculture, industry, forestry, etc in greenhouse gas emissions.	K3	CO2
	(OR)		
12.b.	Discuss the impact of aerosols and short-lived pollutants on the climate system.	K4	
13.a.	Review the significance of carbon credit, carbon tax, and green funding in promoting sustainable development.	K4	CO3
	(OR)		
13.b.	Evaluate the role of recent state and central government climate initiatives (such as EV policies, renewable energy targets, or afforestation drives) in reducing greenhouse gas emissions.	K5	
14.a.	Analyze the environmental consequences of earthquakes, volcanic eruptions, and tsunamis.	K4	CO4
	(OR)		
14.b.	Describe the impacts of landslides and droughts on ecosystems and communities, with suitable case examples.	K5	
15.a.	Analyze the components of the Disaster Management Cycle with examples of how they operate in real scenarios.	K4	CO5
	(OR)		
15.b.	Summarise the long-term environmental challenges after disasters, focusing on waste management, pollution, and ecological restoration.	K5	

**SECTION -C (30 Marks)**Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

Question No.	Question	K Level	CO
16	Critically evaluate the contributions of the Intergovernmental Panel on Climate Change (IPCC) and the United Nations Framework Convention on Climate Change (UNFCCC) in shaping international climate policy.	K5	CO1
17	Assess the effects of polar ice melting and sea level rise on global coastal systems and human settlements.	K6	CO2
18	Discuss the role of the Sustainability Index and Green Bench in ensuring accountability and strengthening climate change adaptation and mitigation frameworks in India.	K6	CO3
19	Diagnose how disasters can cause both immediate and cascading environmental impacts, with suitable examples.	K5	CO4
20	Explain why capacity building and awareness among vulnerable groups is important for disaster mitigation, especially in India.	K6	CO5

Z-Z-Z END