

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

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| 11. Differentiate Food chain and Food web. | 2 | K2 | CO1 |
| 12. What are biodiversity hotspots? Name two biodiversity hotspots in India. | 2 | K1 | CO1 |
| 13. Explain the main causes of climate change. | 2 | K2 | CO2 |
| 14. State Dobson unit. | 2 | K1 | CO2 |
| 15. Explain the hardness of water expressed in terms of calcium carbonate equivalents. | 2 | K2 | CO3 |
| 16. Soft water is not demineralized water whereas dematerialized water is a soft water. Justify. | 2 | K2 | CO3 |
| 17. Show how ion-exchange reactions affect soil properties. | 2 | K2 | CO4 |
| 18. What is meant by sustainable agriculture? | 2 | K1 | CO4 |
| 19. Differentiate between renewable and non-renewable energy sources. | 2 | K2 | CO5 |
| 20. Define Nuclear chain reaction. | 2 | K1 | CO5 |
| 21. Name two ozone-depleting substances replaced by green chemistry. | 2 | K2 | CO6 |
| 22. What is meant by sustainable development? | 2 | K1 | CO6 |

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

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| 23. a) Discuss in detail the Energy flow in an ecosystem. | 11 | K2 | CO1 |
| OR | | | |
| b) Explain the major threats to biodiversity and demonstrate how human activities contribute to biodiversity loss with suitable examples. | 11 | K2 | CO1 |
| 24. a) Discuss the greenhouse effect and how greenhouse gases contribute to climate change. | 11 | K2 | CO2 |
| OR | | | |
| b) Explain the process of ozone layer depletion, its causes, effects and control measures. | 11 | K2 | CO2 |
| 25. a) Explain the demineralization of water using the ion-exchange process. How are exhausted cation and anion exchange resins regenerated? | 11 | K2 | CO3 |
| OR | | | |
| b) Describe rainwater harvesting techniques and their role in water conservation. | 11 | K2 | CO3 |
| 26. a) Discuss the significance of NPK fertilizers in soil fertility and analyze the impacts of excessive and insufficient fertilizer use. | 11 | K2 | CO4 |
| OR | | | |
| b) Explain Solid Waste Management. | 11 | K2 | CO4 |
| 27. a) Describe the principle, construction, and working of solar cells. Discuss their advantages, limitations and applications. | 11 | K2 | CO5 |
| OR | | | |
| b) Describe the main components of a nuclear reactor and explain its working principle. | 11 | K2 | CO5 |
| 28. a) Explain the 12 Principles of Green Chemistry with suitable examples. | 11 | K2 | CO6 |
| OR | | | |
| b) Explain the concept of Zero Waste, R-concept, and Circular Economy in sustainable practices. | 11 | K2 | CO6 |