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Question Paper Code	13317
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B.E. / B.Tech. / M.Tech - DEGREE EXAMINATIONS, NOV / DEC 2024

Second Semester

Computer Science and Engineering

(Common to All Branches)

20BSCY201 - ENVIRONMENTAL SCIENCE AND ENGINEERING

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (MCQ) (20 × 1 = 20 Marks)

Answer ALL Questions

	Marks	K – Level	CO
1. Which of the following is an example of a biotic factor in an ecosystem? (a) Water (b) Soil (c) Sunlight (d) Fungi	1	K2	CO1
2. What is the role of decomposers in an ecosystem? (a) They produce food for the ecosystem (b) They consume primary producers (c) They break down dead organisms and recycle nutrients (d) They eat only plants	1	K1	CO1
3. What does the term "biodiversity hotspot" refer to? (a) Areas with a large variety of species but little human activity (b) Areas with a high number of endemic species that are under threat from human activities (c) Regions that are always warm and wet (d) Locations that have the most endangered species in the world	1	K1	CO1
4. The term "endangered species" refers to: (a) Species that are found only in one location (b) Species whose population is decreasing rapidly (c) Species that live in the deep ocean (d) Species that are abundant in the wild	1	K1	CO1
5. Which of the following is a primary pollutant in air pollution? (a) Ozone (b) Nitrogen dioxide (c) Peroxyacetyl nitrates (d) Smog	1	K2	CO2
6. Which of the following is a significant consequence of marine pollution? (a) Coral reef degradation (b) Increase in fish populations (c) Boost to local economies (d) Higher levels of dissolved oxygen in oceans	1	K1	CO2
7. Which of the following is a common health effect of noise pollution? (a) Insomnia and stress (b) Heart disease and high blood pressure (c) Hearing loss (d) All of the above	1	K2	CO2
8. The "4 Rs" in waste management refer to: (a) Recycle, reduce, reuse, and repair (b) Recycle, reduce, reuse, and replace (c) Recycle, recover, reduce, and resell (d) Recycle, reduce, reuse, and restore	1	K2	CO2
9. Which of the following is a major cause of deforestation? (a) Conservation efforts (b) Overgrazing by livestock (c) Afforestation (d) Urbanization and agricultural expansion	1	K1	CO3
10. Geothermal energy is primarily derived from: (a) The heat stored in the Earth's crust (b) The movement of ocean currents (c) The burning of organic waste (d) The energy generated by the Sun	1	K1	CO3
11. Fossil fuels include all of the following except: (a) Coal (b) Oil (c) Natural gas (d) Geothermal energy	1	K1	CO3

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| 12. What is the primary cause of water scarcity in many regions? | 1 | K1 | CO3 |
| (a) Over-extraction of groundwater | | | |
| (b) Pollution of rivers | | | |
| (c) Unequal distribution of water resources | | | |
| (d) All of the above | | | |
| 13. Green chemistry seeks to minimize the use of which type of materials in chemical processes? | 1 | K2 | CO4 |
| (a) Renewable resources | | | |
| (b) Hazardous substances | | | |
| (c) Non-renewable resources | | | |
| (d) Clean water | | | |
| 14. Environmental ethics focuses on: | 1 | K1 | CO4 |
| (a) The legal aspects of environmental protection | | | |
| (b) Moral principles regarding the relationship between humans and the environment | | | |
| (c) The economic value of natural resources | | | |
| (d) The scientific study of ecosystems | | | |
| 15. The primary objective of the Air (Prevention and Control of Pollution) Act is to: | 1 | K2 | CO4 |
| (a) Promote air pollution | | | |
| (b) Prevent and control air pollution | | | |
| (c) Regulate water pollution | | | |
| (d) Promote the use of non-renewable energy sources | | | |
| 16. What is the primary purpose of an Environmental Impact Assessment (EIA)? | 1 | K1 | CO4 |
| (a) To evaluate the financial viability of a project | | | |
| (b) To assess the potential environmental impacts of a proposed project | | | |
| (c) To evaluate the technological feasibility of a project | | | |
| (d) To determine the social benefits of a project | | | |
| 17. The main cause of population explosion is: | 1 | K2 | CO5 |
| (a) A sudden increase in birth rates | | | |
| (b) A sudden decrease in death rates | | | |
| (c) Increased immigration rates | | | |
| (d) A combination of high birth rates and decreased death rates | | | |
| 18. The importance of value education in schools lies in: | 1 | K1 | CO5 |
| (a) Preparing students for higher education | | | |
| (b) Teaching students how to gain wealth | | | |
| (c) Encouraging students to follow ethical practices and build a responsible society | | | |
| (d) Providing information on new technologies | | | |
| 19. Sustainable Development refers to: | 1 | K1 | CO5 |
| (a) Development that meets the needs of the present without compromising the ability of future generations to meet their own needs | | | |
| (b) Development that focuses only on economic growth | | | |
| (c) Development that prioritizes urbanization | | | |
| (d) Development that solely addresses environmental issues | | | |
| 20. HIV is most commonly transmitted through: | 1 | K2 | CO5 |
| (a) Airborne particles | | | |
| (b) Contact with contaminated food | | | |
| (c) Direct contact with blood, semen, vaginal fluids, or breast milk | | | |
| (d) Insect bites | | | |

PART - B (10 × 2 = 20 Marks)

Answer ALL Questions

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| 21. Define keystone species. | 2 | K1 | CO1 |
| 22. India is a mega diversity nation – justify. | 2 | K2 | CO1 |
| 23. Why nuclear hazards are so dangerous? | 2 | K2 | CO2 |
| 24. Define Decibel. | 2 | K1 | CO2 |
| 25. Identify the ecological benefits of forest. | 2 | K2 | CO3 |
| 26. Distinguish between Renewable and Non-renewable energy sources. | 2 | K2 | CO3 |
| 27. Indicate the main causes of climate change. | 2 | K2 | CO4 |
| 28. Relate resettlement and rehabilitation. | 2 | K2 | CO4 |
| 29. Define doubling time with reference to population. | 2 | K1 | CO5 |
| 30. Illustrate NIMBY syndrome. | 2 | K2 | CO5 |

PART - C (6 × 10 = 60 Marks)

Answer ALL Questions

31. a) Discuss the following in detail: (i) Energy flow in the ecosystem and (ii) Ecological pyramid. 10 K2 CO1
- OR**
- b) Explain the various threats to biodiversity. 10 K2 CO1
32. a) Discuss the various sources, effects and methods of control of water pollution. 10 K2 CO2
- OR**
- b) Explain the methods of separation of components of solid waste and its processing. 10 K2 CO2
33. a) Discuss the problems of fertilizers and pesticides in modern agriculture. 10 K2 CO3
- OR**
- b) Explain the role of an individual in the conservation of natural resources. 10 K2 CO3
34. a) Demonstrate the various mechanisms involved in formation of ozone and the reason behind the depletion of the ozone layer in the atmosphere. 10 K2 CO4
- OR**
- b) Explain the following: 10 K2 CO4
(i) Forest Conservation Act.
(ii) Wildlife Protection Act.
35. a) Explain the role of information technology in the environment and human health protection. 10 K2 CO5
- OR**
- b) Discuss the various issues and measures for women and child welfare. 10 K2 CO5
36. a) Illustrate the various natural calamities and explain any one in detail. 10 K2 CO2
- OR**
- b) Discuss the causes and effects of global warming. 10 K2 CO4