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**Question Paper Code : R3531**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Third Semester

R21UGM331- ENVIRONMENTAL SCIENCE

(Common to all Branches)

(Regulations R2021)

Duration: Three hours

Maximum:100 Marks

PART A - (20 x 1 = 20 Marks)

1. The small ecosystem represented by----- **CO1-U**  
(a) Biome (b) Hotspot (c) Smally (d) Micro
2. A structure with hundreds of species non-linearly interlocked for their **CO1-U**  
livelihood is called  
(a) Food chain (b) Food web (c) Tropic level 1 (d) Tropic level 2
3. The decomposers generate CO<sub>2</sub> during the decomposition of----- **CO1-U**  
(a) Metals (b) Organic matter (c) Water (d) Salt
4. The thickness of the stratosphere is ..... **CO1-U**  
(a) 0-18 kms (b) 18-50 kms (c) 50-85 kms (d) 85-500 kms
5. The severity of an earthquake is generally measured by its magnitude on **CO1-U**  
(a) Meter (b) Richter (c) Ammeter (d) Sonometer
6. Which is geographical origin disaster **CO1-U**  
(a) Flood (b) Earthquake (c) Cyclone (d) Drought
7. The SO<sub>2</sub> reacts with moisture to produce -----air pollutants. **CO1-U**  
(a) Acid rain (b) Primary (c) Secondary (d) Nitric acid
8. The pH of drinking water according to WHO and ISI standard is ----- **CO1-U**  
(a) 6.5 (b) 6.9 (c) 7.9 (d) 8.1

9. The carbon dioxide is called green-house gas because it is **CO1-U**  
(a) Transparent to sunlight but traps heat (b) Transparent to heat but traps sunlight  
(c) Used in green-house to increase plant growth (d) Transparent to both sunlight and heat
10. The instrument used to measure the amount of ozone is **CO1-U**  
(a) Dobson spectrometer (b) Emisiometer (c) IR spectrometer (d) UV
11. The forest conservation act passed in **CO1-U**  
(a) 1985 (b) 1990 (c) 1989 (d) 1980
12. The -----has maximum contribution to enhance greenhouse effect **CO1-U**  
(a) CH<sub>4</sub> (b) CO<sub>2</sub> (c) N<sub>2</sub>O (d) CFC
13. Which of the following passes AIDS from an infected person to others? **CO1-U**  
(a) Saliva (b) Sweat (c) Contaminated syringe (d) All of the these
14. Natality stands for **CO1-U**  
(a) Death rate (b) Birth rate (c) Immigration (d) None of these
15. What makes a better standard of living? **CO1-U**  
(a) Literacy (b) Health care (c) Women welfare (d) All of the above
16. The long term effect of deforestation in large areas of rainforests is **CO1-U**  
(a) Decreased rainfall in those areas (b) Increased ozone depletion  
(c) Increased in wind speeds (d) None of these
17. Which fossil fuel gives 80% of energy? **CO2-U**  
(a) Coal (b) Nuclear (c) LPG (d) Methane
18. The wires containing carbon nanotubes have .....resistance **CO2-U**  
(a) Lower (b) Higher (c) Equal (d) None of the above
19. The father of nuclear power development in India **CO2-U**  
(a) Dr. APJ Abdulkalam (b) Dr. H. Bhaba (c) Newton (d) Einstein
20. The number of neutron released in each fission **CO2-U**  
(a) 3 (b) 5 (c) 12 (d) 32

PART – B (5 x 16= 80 Marks)

21. (a) (i) Outline the structure and function of any one of the aquatic ecosystems? **CO1-U** (8)
- (ii) List out the importance of environmental studies and Public awareness. **CO1-U** (8)
- Or
- (b) (i) Built the ecological pyramid of the pond ecosystem? **CO1-U** (8)
- (ii) Draw the different type of food chain and food web for Terrestrial and aquatic animals. **CO1-U** (8)
22. (a) Elaborate the causes, effects and control measures of water pollution with the recent case study. **CO1-U** (16)
- Or
- (b) Describe the consequences of control measures of landslides and earthquakes **CO1-U** (16)
23. (a) (i) Analyze which gases cause more greenhouse effect in petroleum industries? **CO5-An** (8)
- (ii) Elucidate the importance of rain water harvesting method. **CO5-An** (8)
- Or
- (b) (i) Ozone is a life savoir, if present in the stratosphere, but is a pollutant, if present in the troposphere. Justify the statement and mechanism. **CO5-An** (8)
- (ii) Analyze the causes of flood and give some control measures. **CO5-An** (8)
24. (a) (i) Draw a typical population pyramid of a developing country and discuss how it is likely to differ from that of a developed country. **CO1-U** (8)
- (ii) Describe the role of databases in the environment and human health. **CO1-U** (8)

Or

- (b) (i) Narrate the role of information technology in environment management. **CO1-U** (8)
- (ii) What are sources and modes of transmission of HIV infection? Name the major precautions to avoid AIDS. Which approaches do you suggest for its control? **CO1-U** (8)
25. (a) (i) Define solar energy and explain the methods to harness solar energy. **CO2-U** (8)
- (ii) How alternative energy sources play an important role in the environment. **CO2-U** (8)
- Or
- (b) (i) List out the advantages and disadvantages of non-conventional energy resources? **CO2-U** (8)
- (ii) Write the various applications of nanotechnology. **CO2-U** (8)