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**Question Paper Code: R3531**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2025

Third Semester

Agricultural Engineering

R21UGM331 – ENVIRONMENTAL SCIENCE

(Regulations R2021)

(Common to All Engineering Branches)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (20 x 1 = 20 Marks)

1. What proportion of the troposphere's oxygen is present? CO1-U  
(a) 19                      (b) 21                      (c) 78                      (d) 1
2. Small ecosystem represented by----- CO1-U  
(a) Biome                      (b) Hotspot                      (c) Ssmally                      (d) Micro
3. Pyramids of Numbers at each successive level are.... CO1-U  
(a) Decreases                      (b) Increases                      (c) Constant                      (d) No change
4. The atmosphere's topmost layer extends up to CO1-U  
(a) 18 kms                      (b) 50 kms                      (c) 500 kms                      (d) 1600 kms
5. Which of the following are bio-degradable pollutants? CO2-U  
(a) DDT                      (b) Mercury                      (c) Municipal sewage                      (d) Lead
6. Which is a disaster with a geographical origin? CO2-U  
(a) Flood                      (b) Earthquake                      (c) Cyclone                      (d) Drought
7. The magnitude of earthquake \_\_\_\_\_ than 8.5 in richter scale having ability to generate water waves CO2-U  
(a) Greater than                      (b) Lesser than                      (c) Equal                      (d) Constant
8. Blue baby syndrome is caused by the presence of -----in the water CO2-U  
(a) Oxides                      (b) Nitrates                      (c) Sulphates                      (d) Halides

9. Ozone is highly concentrated in CO3-U  
 (a) Troposphere (b) Mesosphere (c) Troposphere (d) Stratosphere
10. Which of the following gases contributes most to the intensification of the greenhouse effect? CO3-U  
 (a) CH<sub>4</sub> (b) CO<sub>2</sub> (c) N<sub>2</sub>O (d) CFC's
11. Chernobyl disaster is associated with CO3-U  
 (a) Acid rain (b) Earthquake (c) Nuclear accident (d) Landslide
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 (a) Acid rain (b) Earthquake  
 (c) Nuclear accident (d) Landslide
13. Which articles provides for equality before law CO4-U  
 (a) Article 14 (b) Article 16 (c) Article 18 (d) Article 20
14. Pick up the correct expansion of GIS. CO4-U  
 (a) Geographic information system (b) Global information system  
 (c) Genetic information system (d) None of the these
15. Which of the following disease is transmitted by blood? CO4-U  
 (a) AIDS (b) Malaria (c) Fever (d) Cholera
16. The wires containing carbon nanotubes have .....resistance CO5-U  
 (a) Lower (b) Higher (c) Equal (d) None of the above
17. The number of neutron released in nuclear fission reaction is CO5-U  
 (a) 3 (b) 5 (c) 12 (d) 32
18. The source of tidal energy is CO5-U  
 (a) Wind (b) Fossil fuel (c) Ocean (d) Sun
19. Minimum speed required for satisfactory working of a wind generator is \_\_\_\_\_ CO5-U  
 (a) 30 km/hr (b) 60 km/hr (c) 5 km/hr (d) 15 km/hr
20. U<sup>235</sup> undergoes \_\_\_\_\_ reaction. CO5-U  
 (a) Nuclear fission (b) Nuclear fusion (c) Both (a) & (b) (d) Controlled fusion

PART – B (5 x 16= 80 Marks)

21. (a) Outline the structure and function of any one of the aquatic ecosystems. CO1-U (16)
- Or
- (b) Draw the different type of food chain and food web for Terrestrial and aquatic animals. CO1-U (16)
22. (a) Imagine your college is located near a busy highway, and students are finding it difficult to concentrate due to high noise levels. Based on the main idea of controlling noise pollution, what measures would you apply to reduce the noise impact in the campus? CO2-Ana (16)
- Or
- (b) Analyze the effects and control measures of flood in Chennai - 2015. CO2-Ana (16)
23. (a) Explain the Bhopal disaster and Chernobyl disaster. CO3-U (16)
- Or
- (b) Discuss the connection between ozone layer depletion and climate change? Outline the reasons for ozone layer depletion and its impact on the environment. CO3-U (16)
24. (a) Justify the need for controlling population growth rate. CO4-App (16)
- Or
- (b) Suggest precautionary measures you can take in your school and college to reduce the incidence of infectious disease. CO4-App (16)
25. (a) Discuss hydro electric energy with its applications. CO5-U (16)
- Or
- (b) Describe the role of nanotechnology and green power play in environmental sustainability. CO5-U (16)

