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Question Paper Code : 90281

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019
Second/Third/Fourth/Fifth Semester

Geoinformatics Engineering

GE 8291 : ENVIRONMENTAL SCIENCE AND ENGINEERING

(Common to Medical Electronics/Fashion Technology/Handloom and Textile Technology/Textile Chemistry/Textile Technology/Aeronautical Engineering/ Agriculture Engineering/Automobile Engineering/Civil Engineering/Computer Science and Engineering/Computer and Communication Engineering/Electrical and Electronics Engineering/Electronics and Communication Engineering/ Electronics and Instrumentation Engineering/Electronics and Telecommunication Engineering/ Environmental Engineering/Industrial Engineering/Industrial Engineering and Management/Instrumentation and Control Engineering/ Manufacturing Engineering/ Marine Engineering/Material Science and Engineering/Mechanical Engineering/Mechanical Engineering (Sandwich) Mechanical and Automation Engineering/Mechatronics Engineering/Production Engineering/Robotics and Automation Engineering/Biotechnology/Chemical Engineering/Chemical and Electrochemical Engineering/Food Technology/Information Technology/ Pharmaceutical Technology/Plastic Technology/Polymer Technology)
(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART - A

(10×2=20 Marks)

1. What would happen to an ecosystem if all its producers were eliminated ?
2. What are biodiversity hot-spots ? Name two important biodiversity hot spots in India.
3. Suggest three points as an individual responsibility in the prevention of pollution.
4. State the significant effects of thermal pollution. Name the control methods adopted.



5. State the environmental effects of extracting and using mineral resources.
6. Identify the main reasons for deprivation of food resources in the present human development.
7. Outline the advantages of rainwater harvesting.
8. Define the term environmental ethics.
9. What is population explosion? What are the causes of population explosion?
10. What is human development index?

PART – B

(5×13=65 Marks)

11. a) i) Classify the ecological pyramids and discuss their significance. (8)
- ii) Describe the structure and function of grassland ecosystem. (8)
- (OR)
- b) i) Classify the various levels of biodiversity and outline the various threats to biodiversity. (8)
- ii) Discuss the In-situ and Ex-situ conservation of biodiversity with their advantages and limitations. (8)
12. a) i) Summarize the important water pollutants and their sources. Suggest three important steps to be adopted in water pollution control. (8)
- ii) Identify the sources of the following air pollutants and their effects on human health; carbon monoxide, nitrogen oxide, sulphur oxide and particulate matter. (8)
- (OR)
- b) i) Discuss the various sources and classification of municipal solid waste generated from a society. (8)
- ii) Discuss the causes, effects and preventive measures of floods. (8)

13. a) i) Distinguish between commercial and ecological function of forest resources. Enumerate the consequences of deforestation. (8)
- ii) Discuss the causes and effects of soil degradation. (8)
- (OR)
- b) Identify the reason for growing energy demand. Discuss the advantages and limitations of using the following energy resources : solar energy, wind energy and thermal power energy.
14. a) i) Define the term sustainable development. Suggest important measures to be adopted in achieving sustainable development. (8)
- ii) Outline the salient features provided in the Water Prevention and Control of Pollution Act and duties of State Pollution Control Board. (8)
- (OR)
- b) Distinguish between natural and enhanced green house effect. List the principal greenhouse gases. Outline the effects of global warming.
15. a) i) Illustrate and explain the three types population variation based on age structure in different nations. (8)
- ii) Explain the applications of remote sensing in environmental management. (8)
- (OR)
- b) i) Explain the importance and methods of imparting value education. (8)
- ii) Discuss various issues and measures for women and child welfare at international and national level. (8)

PART – C

(1×15=15 Marks)

16. a) Describe any three renewable resources which Chennai is abundant with and can harness for its energy needs.
- (OR)
- b) Explain the various unit operations and process pertaining to wastewater treatment with the help of a neat sketch.