Reg. No.

Question Paper Code : 51516

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Third Semester

Electrical and Electronics Engineering

GE 2211/GE 33/080300008/080130067/10177 GE 001/10177 GE 001 A —
ENVIRONMENTAL SCIENCE AND ENGINEERING

(Common to Chemical Engineering, Textile Technology, Instrumentation and
Control Engineering, Biotechnology, Plastic Technology, Electronics and
Instrumentation Engineering, Polymer Technology and Textile Technology (Fashion
Technology))

(Also common to 10177 GE 001 for Biotechnology, Electrical and Electronics
Engineering, Electronics and Instrumentation Engineering, Instrumentation and
Control Engineering and 10177 GE 001 A for Chemical Engineering)

(Regulation 2008/2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What do you mean natural resources? Give examples.

2. What are the energy needs procured for India?

3. Define biodiversity.

4. List out the characteristic features of food webs.

5. Define pollution.

6. Give some reasons behind Global warming.

7. How the public awareness on social issues and the environment are
   implemented?

8. What is global warming potential?

9. What is zero discharge? Why is zero discharge not practical in most instances?

10. List out any four environmental protection acts.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain in detail about the forest resources and give the merits and demerits of forest resources. (8)

    (ii) What are the problems of modern agriculture, fertilizer and pesticide? (8)

Or

    (b) (i) Discuss in detail about water resources. (8)

    (ii) Explain the role of an individual towards conservation of natural resources. (8)

12. (a) What are the different types of ecosystems and explain their structure and functions?

Or

    (b) (i) Discuss the value of biodiversity. (8)

    (ii) Explain the role of biodiversity in India. (8)

13. (a) Discuss the causes and control measures of
    (i) Air pollution (each 4)
    (ii) Soil pollution
    (iii) Marine pollution
    (iv) Noise pollution

Or

    (b) Explain one case study on waste water treatment methodology in industrial effluent.

14. (a) (i) What are the major functions of central board? (4)

    (ii) Explain in brief about the present regulatory trends in air, waste water and recycling. (12)

Or

    (b) A Large power plant has a 250m stack with inside radius 2m. The exit velocity of the stack gases is estimated at 15 m/s, at a temperature of 140°C. The ambient temperature is 25°C and winds at stack height are estimated to be 5m/s. Estimate the effective height of the stack if (i) the atmosphere is stable with temperature increasing at the rate of 2°c/Km. (ii) The atmosphere is slightly unstable.

15. (a) Explain the role of information technology in environment and human health.

Or

    (b) A city had a population of 25000. Estimate the annual area requirements (excluding the buffer zone) for a normally compacted landfill having a refuse depth of 4m excluding cover material, assuming that per capital waste generation is 2kg/day and the density of the normally compacted landfill is 450kg/m³.

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