

**Reg. No. :**

Question Paper Code : 71947

**B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.**

Third/Fourth/Fifth/Sixth/Seventh/Eighth Semester

Mechanical Engineering

GE 6351 – ENVIRONMENTAL SCIENCE AND ENGINEERING

(Common to Aeronautical Engineering, Agriculture Engineering, Automobile Engineering, Biomedical Engineering, Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, Environmental Engineering, Geoinformatics Engineering, Industrial Engineering, Industrial Engineering and Management, Instrumentation and Control Engineering, Manufacturing Engineering, Marine Engineering, Materials Science and Engineering, Mechanical and Automation Engineering, Mechatronics Engineering, Medical Electronics Engineering, Petrochemical Engineering, Production Engineering, Robotics and Automation Engineering, Bio technology, Chemical Engineering, Chemical and Electrochemical Engineering, Fashion Technology, Food Technology, Handloom and Textile Technology, Information Technology, Petrochemical Technology, Petroleum Engineering, Pharmaceutical Technology, Plastic Technology, Polymer Technology, Textile Chemistry, Textile Technology)

(Regulations 2013)

**Time : Three hours**

Maximum : 100 marks

Answer ALL questions.

**PART A — (10 × 2 = 20 marks)**

1. What do you understand by 'species biodiversity'? Give one example.
2. How is nitrogen fixed in soil?
3. What are the characteristics of PAN?
4. Mention the effects of nuclear wastes in humans.
5. Give any two reasons for marine pollution.
6. Write any two problems caused by high saline soils.

7. How is cyclone formed?
8. When does rehabilitation arise? Mention any one problem to government during rehabilitation.
9. What is meant by value education?
10. Mention any two welfare programs for children adopted in India.

PART B — (5 × 13 = 65 marks)

11. (a) (i) Explain the structure and function of grassland eco system. (6)
- (ii) Substantiate the statement, 'India is a megadiversity nation'. (7)

Or

- (b) (i) Write the importance of biological hazard in the environment. (6)
- (ii) Explain the methods of conservation of biodiversity. (7)

12. (a) (i) How is noise pollution controlled? (6)
- (ii) Write a detailed note on photo chemical reactions taking place in the atmosphere. (7)

Or

- (b) (i) What are the effects of heavy metals in aquatic environment. (6)
- (ii) What is a particulate matter? How is it controlled by using equipment? (7)

13. (a) (i) What are the reasons of deforestation? (6)
- (ii) How is biogas generated? (7)

Or

- (b) Explain in detail the effect of modern agriculture which includes both beneficial and adverse effects. (13)

14. (a) What is green chemistry? Explain the various principles of green chemistry with suitable examples. (13)

Or

- (b) Explain the features of the following :
  - (i) Air Act
  - (ii) Forest conservation Act. (13)

15. (a) Describe the following : (13)
  - (i) Environment and human health relation.
  - (ii) HIV and AIDS.

Or

- (b) What do you mean by environmental impact analysis? What are the methods followed for EIA? (13)

PART C — (1 × 15 = 15 marks)

16. (a) Enlist the rules of management and handling biomedical waste and analyse critically the problems associated with the implementation.

Or

- (b) Analyse the environmental effects of extracting and using mineral resources and write the remedies taken.