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Question Paper Code : 80225

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2025.

Second Semester

Electrical and Electronics Engineering

BE 3255 – BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electrical and Computer Engineering/Electronics and Instrumentation Engineering/Environmental Engineering/Instrumentation and Control Engineering)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write the importance of environmental engineering.
2. What are the main ways of assessing water quality?
3. Why surveying is important for engineers?
4. Define Fibre Reinforced Concrete (FRC).
5. Give the types of foundations used for telecommunication towers?
6. State the necessity of bridges.
7. Mention few applications of internal combustion engines.
8. What is global warming?
9. List the different types of refrigerants.
10. Write the applications of air conditioning.

PART B — (5 × 13 = 65 marks)

11. (a) Explain in detail about the various types of buildings.

Or

- (b) Discuss the objectives and methods of rainwater harvesting.

12. (a) List the uses of the following construction materials : bricks, stones, cement, cement concrete and steel and what are the qualities of a good brick?

Or

- (b) Give the classification of surveys and explain the principles of surveying.
13. (a) Discuss the points to be considered while selecting the site for any particular building and the various types of foundations.

Or

- (b) (i) What is a dam and what are the purposes of a dam? (5)
(ii) Explain the factors based on which the site for a dam is selected? (8)
14. (a) How are the internal combustion engines classified? Discuss the main components of IC engines.

Or

- (b) Give the classification of power plants and explain any one power plant with a neat sketch.
15. (a) Discuss the working of window or split air conditioners.

Or

- (b) Draw the layout diagram of a typical domestic refrigerator and explain the working of its various components.

PART C — (1 × 15 = 15 marks)

16. (a) How to design a efficient waste storage container for urban areas. Explain briefly.

Or

- (b) Evaluate the various renewable and non renewable sources of energy in India.