

Reg. No. : 

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| <b>Question Paper Code : 90216</b> |
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B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 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. What are Green Buildings?
2. What is meant by plinth area?
3. What are the instruments that used for levelling?
4. List the uses of channel and T-sections.
5. What are the different foundations used for transmission line towers?
6. What is culvert? Mention the common types.
7. List the disadvantages of nuclear power plants.
8. How are the pumps classified?
9. Mention the essential components of a vapour-absorption refrigeration system.
10. Define dew-point temperature.

PART B — (5 × 13 = 65 marks)

11. (a) Discuss the various interdisciplinary concepts in Civil and Mechanical engineering.

Or

- (b) Explain the commonly used method of recharging groundwater aquifers.

12. (a) Describe the various types of cement, specifying the applications for each.

Or

- (b) Explain the principles of surveying. What are the advantages and disadvantages of chain surveying?

13. (a) Describe briefly the methods for improving the bearing capacity of the soil.

Or

- (b) What are the factors influencing the selection of dam? Discuss with neat sketch any one type of dam.

14. (a) With a simple sketch, discuss the various components of Internal Combustion engines.

Or

- (b) Discuss the layout of a hydroelectric power plant and the types of water turbines.

15. (a) Write short notes on window and split air conditioners and compare the unitary and central air-conditioning system.

Or

- (b) Explain the working of Vapour Compression Refrigeration systems.

PART C — (1 × 15 = 15 marks)

16. (a) What is cogeneration? Discuss about the functions of cogeneration power plant.

Or

- (b) Discuss about solar energy utilization in power generation with suitable examples.