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Question Paper Code : 77160

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

Second Semester

Electrical and Electronics Engineering

GE 6251 — BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electronics and Instrumentation Engineering, Instrumentation and Control Engineering)

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the types of surveying?
2. Write any four types of cement.
3. What is Safe Bearing Capacity (SBC) of soil?
4. Write the relation between stress and strain and show the notations used.
5. Classify the power plants.
6. Write the working principle of centrifugal pumps.
7. What are the types of heat engines and define about any one type?
8. Write down any two prime requirements of a boiler.
9. What is capacity of refrigerator?
10. Define air conditioning.



PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the principles of surveying? (6)
(ii) Explain with a sketch the 'rise and fall method' of leveling. (10)

Or

- (b) (i) What are the qualities of stones? (6)
(ii) What is cement concrete and what are the tests carried out in cement concrete? (10)

12. (a) What are the types of foundation? Write down the requirements of good foundation.

Or

- (b) (i) Compare the brick masonry with stone masonry. (10)
(ii) Define stress and strain. (6)

13. (a) Write in detail the working principle of thermal power plants and also give their advantages.

Or

- (b) What are the advantages of nuclear power plants? Write down the applications of diesel power plants.

14. (a) Classify the I.C. Engines. With a neat sketch show the parts of I.C. engines.

Or

- (b) Explain with a sketch the various stages involved in the four stroke cycle diesel engine.

15. (a) State the principle of refrigeration. Write down the properties of an ideal refrigerant.

Or

- (b) Classify the air-conditioning systems and explain them briefly.

