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Question Paper Code : 53126

EEE - I

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

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 functions of theodolite survey?
2. State the basic requirements of a good building stones.
3. Write any four disadvantages of flat roofs.
4. Define stress and strain.
5. Mention the reason for preferring steam power plant to other power plants.
6. Distinguish between impulse and reaction turbine.
7. Why fuel is injected in a C.I. engine?
8. What is the use of an economizer in a high pressure boiler?
9. Give some properties of a good refrigerant.
10. Draw the layout of a window type air conditioner and mark the parts.

PART B — (5 × 16 = 80 marks)

11. (a) (i) List the types of cement and Explain the properties of ordinary Portland cement. (8)
(ii) Explain the various properties and uses of stones. (8)

Or

- (b) (i) Explain with a neat sketch prismatic compass surveying. (8)
(ii) What are the different types of steel? Explain the properties and uses? (8)

12. (a) (i) State the various functions of a foundation for a building. (4)
(ii) Enumerate different types of bonds used in Brick masonry. Explain them briefly. (12)

Or

- (b) (i) List the various factors to be considered while selecting a site for Construction of Dam. (10)
(ii) Describe with neat sketches of arch foundation and pile foundation. (6)
13. (a) (i) With a neat schematic diagram, explain the working principle of a thermal power plant. (12)
(ii) State the merits and demerits of a gas turbine plant. (4)

Or

- (b) (i) With the help of a neat sketch explain the working of Reciprocating Pump. (8)
(ii) What is cavitation in pumps? Explain. (8)
14. (a) (i) Describe the principal parts and functions of any one high pressure boiler with neat sketch. (8)
(ii) Write in detail about the working principle of two stroke petrol engine. (8)

Or

- (b) (i) Explain the principle of working of a four stroke Diesel engine with suitable sketches. (8)
(ii) Compare SI and CI engines with merits and demerits. (8)
15. (a) (i) With the help of flow diagram explain the principle of working of a vapour absorption refrigeration system. (8)
(ii) Give the comparison of vapour absorption with vapour compression refrigeration system. (8)

Or

- (b) (i) With a neat sketch, explain in detail the working of a split type room air Conditioner. State its merits and demerits. (12)
(ii) Discuss the advantages and disadvantages of window type room air conditioner. (4)