Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 20629

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Second Semester

Electrical and Electronics Engineering

GE 6251 — BASIC CIVIL AND MECHANICAL ENGINEERING

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

(Regulations 2013)

Time : Three hours Maximum : 100 marks

(Codes/Tables/Charts to be permitted, if any, may be indicated)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write the arithmetic equation used in rise and fall method of leveling.

2. How are bricks classified?

3. Define objectives of foundations.

4. What are beams? How are beams classified depending on support?

5. What are the classifications of power plants based on renewable source of energy?

6. What is the working principle of centrifugal pump?

7. What are the basic components of I.C. engines?

8. What are the main functions of a lubricating system?

9. Write the different kinds of heat transfer modes with examples.

10. Write the classification of refrigerants with examples.

PART B — (5 × 16 = 80 marks)

11. (a) (i) The following perpendicular offsets were taken at 10 meter intervals from a survey line to an irregular boundary line : 3.60, 2.80, 4.50, 8.25, 7.85, 6.45, 5.35. Calculate the area enclosed between the survey one and the boundary line by the trapezoidal rule and the Simpson's rule. (8)

(ii) Describe with a neat sketch of prismatic compass. (8)

Or

(b) What are the different types of cement? Explain the properties and uses. (16)

12. (a) Describe in brief about the Pile foundation with its types and sketches, and list out any four types of shallow foundation. (16)

Or

(b) Discuss in detail about components of bridge and types of bridge with diagrams wherever needed respectively. (16)

13. (a) (i) Explain working principle of Diesel Engine Power plant With Neat sketch. (12)

(ii) Write its advantages and disadvantages. (4)

Or

(b) (i) With the help of a neat sketch explain the working of single acting and Double acting Reciprocating Pump. (12)

(ii) List some difference between centrifugal pumps and reciprocating pumps. (4)

14. (a) Describe the principal parts and functions of a Four Stroke Diesel engine with neat sketch. (16)

Or

(b) Classify boilers and describe the principal parts and functions of any one high pressure boiler with neat sketch. (16)

15. (a) With a neat layout, briefly explain about the construction and working principle of a vapor compression refrigeration system. (16)

Or

(b) List few application of air conditioning system and explain with a neat sketch the layout of a window air conditioning with merits and demerits. (16)

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