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Question Paper Code : 27272

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

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

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the principle of surveying.
2. Classify the cement concrete according to IS: 456-2000.
3. Define bearing capacity of soil.
4. What is bond in masonry?
5. Distinguish between external forces and internal forces.
6. What are the main components of Nuclear power plant?
7. Classify the internal combustion (I.C) engine.
8. Write down any two differences between 2-stroke and 4-stroke cycle engines.
9. What is capacity of refrigerator?
10. Write any two advantages of split type room air conditioner.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Classify the surveying based upon the objective of survey. (4)
- (ii) The following are the observed fore bearing of the traverse sides: AB, $70^{\circ} 30'$; BC, $140^{\circ} 15'$; CD, $260^{\circ} 15'$; and DE, $335^{\circ} 30'$. Find their back bearings. (4 × 3 = 12)

Or

- (b) (i) Write any four qualities of bricks. (4)
- (ii) What is cement concrete? And what are their uses and properties. (12)

12. (a) (i) What are the requirements of good foundation? (4)
(ii) Compare the brick masonry with stone masonry. (12)

Or

- (b) (i) What are the components of a bridge? (4)
(ii) State the various points to be considered for the selection of a site for a dam. (12)

13. (a) Explain with a sketch the working of thermal power plant. (16)

Or

- (b) Explain with a sketch the working of Diesel power plant. (16)

14. (a) Explain with a sketch the working principle of four-stroke cycle diesel engine. (16)

Or

- (b) Explain with a sketch (draw only the first stage) the operation of two-stroke petrol engine. (16)

15. (a) Draw the layout of a vapour absorption refrigeration system and briefly explain the working principle. (16)

Or

- (b) With a neat diagram explain the working of window air conditioner. (16)
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