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Question Paper Code : 81039

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

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. Differentiate between Open traverse and Closed traverse survey.
2. Define Magnetic bearing.
3. Why is Steel a good reinforcing agent in RCC? Give two reasons.
4. What is the use of an Abutment?
5. Mention two disadvantages of Gas turbines.
6. What is the use of a Blow off valve in a boiler?
7. What is the use of a Flywheel in an IC Engine?
8. Mention two advantages of a Tidal power plant.
9. Write any two types of refrigerants
10. Mention two differences between vapour compression and absorption refrigeration systems.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Differentiate between Prismatic and Surveyor compass. (8)
- (ii) Explain the various characteristic features of contours with sketches. (8)

Or

- (b) (i) Explain the various steps in the manufacturing of bricks. (8)
- (ii) With a neat sketch, indicate the parts of a Dumpy level. (8)

12. (a) With neat sketches, explain the different types of Shallow foundations used in building constructions. (16)

Or

- (b) With neat sketches, explain the different types of Bonds used in brick work. (16)

13. (a) (i) With a neat sketch explain the working principle of a Pressurized water reactor. (8)
(ii) With a neat sketch explain the working principle of a Single stage impulse turbine. (8)

Or

- (b) (i) With a neat sketch explain the working principle of a Centrifugal Pump. (8)
(ii) With a neat sketch explain the working principle of a Double acting Pump. (8)

14. (a) (i) With a neat sketch explain the working principle of a Four stroke petrol engine. (12)
(ii) Mention four differences between 2 stroke and 4 stroke engines. (4)

Or

- (b) (i) Sketch and explain the principle of a Magneto Ignition system. (12)
(ii) What are the requirements of a good lubricating oil. (4)

15. (a) (i) How does a Vapour compression refrigeration system work? Explain with a sketch. (10)
(ii) Mention the advantages of a Thermo electric cooling system. (6)

Or

- (b) (i) With a neat sketch, list the various parts of a Split type air conditioner. (8)
(ii) How does a Vapour absorption refrigeration system work? Explain with a sketch. (8)