

Register No:

B.E. DEGREE EXAMINATIONS: MAY / JUNE 2011

Second Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

MEC211: Basis of Civil & Mechanical Engineering

Time: Three hours

Maximum Marks: 100

Answer ALL Questions

PART A (10x1 = 10 Marks)

1. The WCB of a survey line is 175° , then RB will be
(a) N 25° E (b) S 5° W (c) S 5° E (d) N 5° W
2. Height of Instrumentation can be determined by
(a) Traversing (b) Surveying (c) Levelling (d) Linear Measurement
3. Pick out the type of foundation suitable for clay and weak soils.
(a) Isolated (b) Raft (c) Stepped (d) Deep
4. Which type of bond is used for residential purpose
(a) Header (b) English (c) Raking (d) Zig Zag bond
5. A moderator generally used in nuclear power plants is
(a) Graphite (b) heavy water (c) concrete (d) graphite and concrete
6. A power plant giving least running cost of production of electrical power is
(a) Steam power plant (b) nuclear power plant
(c) hydro electric power plant (d) Gas turbine power plant
7. The thermodynamic cycle on which the petrol engine works, is
(a) Otto cycle (b) Joule cycle (c) Rankine cycle (d) Stirling cycle
8. Which of the following pump is suitable for small discharge and high heads?
(a) Centrifugal (b) Axial flow (c) mixed flow (d) Reciprocating
9. A vapour absorption refrigerator uses as a refrigerant
(a) Water (b) ammonia (c) Freon (d) aqua-ammonia
10. The process generally used in winter air-conditioning to warm and humidity the air, is called
(a) Humidification (b) dehumidification
(c) heating and humidification (d) cooling and dehumidification

PART B (10 x 2 = 20 Marks)

11. Define surveying
12. What are the methods used in evaluating a land area?
13. What are the ways of improving bearing capacity of soils?
14. How the beams are classified?
15. What are the different circuits used in steam power plant?
16. What is the function of moderator in nuclear reactors?
17. Differentiate between two stroke engine and four stroke engines.
18. List out the different types of pump?
19. What are the qualities required for a good refrigerant.
20. Define the term "Coefficient of performance"

PART C (5 x 14 = 70 Marks)

21. a) Explain in detail about the classification of surveying.

(OR)

- b) Write the qualities of good Bricks.

22. a) A mild steel bar of 10 mm diameter and 100mm length is subjected to tensile force of 10 KN. Due to this force bar produces an extension of 0.060 mm and diameter is reduced by 0.0018 mm. determine Young's modulus, Poisson's ratio, shear modulus and bulks modulus.

(OR)

- b) What are the factors to be considered while selecting a suitable landscape design.

23. a) (i) State the principle of Hydro electric power plant. Explain its working with neat sketch. (10)
- (ii) State the advantage and disadvantage of hydro electric power plant (4)

(OR)

b) (i) What are the classification of boilers and explain in detail the working of Cochran boiler with neat sketch.

24. a) Explain the working principle of double acting reciprocating pump with neat sketch & state its advantages and disadvantages

(OR)

b) (i) Explain the working principle of four stroke cycle diesel engine. (10)

(ii) State the difference between SI and CI engine. (4)

25. a) Draw the sketch of vapour absorption system. List out the components and their functions.

(OR)

b) Explain in detail window and split air conditioner.
