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Question Paper Code: 32705

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Second Semester

Civil Engineering

01UME205 - BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to ALL Branches)

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Name the two principles of surveying.
2. What are the uses of stones?
3. Define safe bearing capacity.
4. Mention any two types of flooring.
5. Mention any two types of power plants.
6. Write down the classification of pumps.
7. Define I.C. engine.
8. Name any four boiler mountings.
9. List the major components of a vapour compression refrigeration system.
10. Name any four refrigerants.

PART - B (5 x 16 = 80 Marks)

11. (a) The following perpendicular offsets were taken at 10 meter intervals from a survey line to an irregular boundary line 3.15 m, 4.30 m, 8.20 m, 5.60 m, 6.85 m, 7.60 m, 4.20 m, 5.60 m and 4.30 m. Calculate the area enclosed between the survey line, irregular boundary line, and first and last offsets by the application of:
- (1) average ordinate rule
 - (2) trapezoidal rule and
 - (3) simpson's rule. (16)

Or

- (b) (i) Discuss the different types of bricks. (8)
- (ii) Explain the preparation methodology of cement concrete. (8)
12. (a) Discuss the different types of shallow foundation with neat sketches. (16)

Or

- (b) (i) List the types of bridges and explain any one. (8)
- (ii) List the types of dams and explain any one. (8)
13. (a) With a neat layout, explain the various circuits of a Steam Power Plant. Specify its advantages. (16)

Or

- (b) (i) Explain the construction and working of a single acting reciprocating pump with the help of a neat sketch, naming all main parts. (8)
- (ii) Explain the construction and working of a centrifugal pump with a neat sketch. (8)
14. (a) Explain the working of a Four stroke Petrol Engine with a neat sketch. (16)

Or

- (b) Compare the four stroke engine and the two stroke engine. (16)

15. (a) Explain the principle and working of a Vapor Compression Refrigeration system with a neat sketch (16)

Or

(b) Explain the window air conditioner with a neat diagram. (16)
