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**Question Paper Code: 52708**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2023

Second Semester

Mechanical Engineering

15UME208 - BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electrical and Electronics Engineering)

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Hydrographic surveys deal with the mapping of CO1-R
  - Large water bodies
  - Heavenly bodies
  - Mountaineous region
  - Canal system
- Which of the below is not a preliminary consideration for building a foundation? CO1-R
  - Bearing capacity of soil
  - Ground water condition
  - Settlement control
  - Soil organisms
- The foundations are placed below ground level to increase CO2-R
  - Strength
  - Workability
  - Stability of structure
  - All the above
- A solid barrier constructed at a suitable location across a river valley to impound water is called CO2-R
  - Reservoir
  - Dam
  - Bridge
  - Retaining wall
- The following is not a component of Thermal power plant CO3-R
  - Condenser
  - Cooling tower
  - Turbine
  - Fuel tank

6. Which of the following pump is preferred for flood control and irrigation applications? CO3-R
- (a) Centrifugal pump (c) Axial flows pump  
 (b) Mixed flow pump (d) Reciprocating pump
7. A two stroke cycle engine gives ..... the number of power strokes as compared to the four stroke cycle engine, at the same engine speed CO4-R
- (a) Half (b) Same (c) Double (d) Four times
8. The power developed by a diesel engine is not increased by CO4-R
- (a) higher compression ratio (b) fine atomisation of fuel  
 (c) excess supply of air (d) supplying air at increased pressure
9. One tonne of refrigeration is equal to CO5-R
- (a) 21/kJ/min (b) 210/kJ/min (c) 420/kJ/min (d) 620/kJ/min
10. Air conditioning means CO5-R
- (a) Cooling (b) Heating  
 (c) Dehumidifying (d) All of these

PART – B (5 x 2= 10Marks)

11. What are the constituent materials of bricks? CO1-R
12. State the objectives and requirements of good foundation? CO2-R
13. What is the function of Moderator? CO3-R
14. What do you understand by Scavenging? CO4-R
15. Define humidity CO5-R

PART – C (5 x 16= 80Marks)

16. (a) Give the classification of surveys. List the advantages and disadvantages of chain surveying. CO1-U (16)
- Or
- (b) What are the different types of steel? Explain the properties and uses? CO1-U (16)

17. (a) Discuss different types of foundation with the help of neat sketches CO2-U (16)
- Or
- (b) Explain with neat sketch the different types of piles. CO2-U (16)
18. (a) Explain the working principle of steam power plant with neat sketch CO3-U (16)
- Or
- (b) With the help of a neat sketch explain the working of Centrifugal Pump CO3-U (16)
19. (a) Describe the principal parts and functions of a Four Stroke Petrol engine with neat sketch CO4-U (16)
- Or
- (b) Describe the principal parts and functions of any one high pressure boiler with neat sketch CO4-U (16)
20. (a) Explain the principle and working of vapour compression refrigeration system. CO5-U (16)
- Or
- (b) With the neat sketch explain the layout of a window room air conditioning CO5-U (16)

