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**Question Paper Code: 42705**

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

Second Semester

Computer Science and Engineering

14UME205 – BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to EEE, ECE, EIE, ICE, MECH and IT)

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 1 = 10 Marks)

- Hydrographic surveys deal with the mapping of
  - Large water bodies
  - Heavenly bodies
  - Mountainous region
  - Canal system
- For ensuring quality of concrete, use
  - Single sized aggregate
  - Coarse aggregate
  - Two sized aggregate
  - Graded aggregate
- The bond which contains alternate courses of headers and stretchers is called
  - Stretcher bond
  - Flemish bond
  - English bond
  - Header bond
- Which of the following materials is most elastic
  - rubber
  - plastic
  - brass
  - steel
- Economiser is used to heat
  - Air
  - Feed water
  - Flue gases
  - All of the above

6. An impulse turbine is used for  
(a) Low head of water (b) High head of water  
(c) Medium head of water (d) High discharge
7. The working cycle in case of four stroke IC engine is completed in following number of revolutions of crankshaft.  
(a)  $\frac{1}{2}$  (b) 1 (c) 2 (d) 4
8. Which device is the accessory of boiler?  
(a) Steam stop valve (b) Economiser (c) Blow-off cock (d) Fusible plug
9. In a vapor-compression refrigeration system, the abrupt reduction of pressure takes place in the  
(a) compressor (b) condenser (c) throttle valve (d) evaporator
10. Rating of domestic refrigerator is of the order of  
(a) 5 tons (b) 10 tons (c) 0.1 tons (d) 40 tons

PART - B (5 x 2 = 10 Marks)

11. Classify the types of Bricks?
12. Differentiate Substructure and Superstructure.
13. List three solid/liquid/gaseous fuels
14. What is meant by scavenging in two stroke engines?
15. Define “ton of refrigeration”.

PART - C (5 x 16 = 80 Marks)

16. (a) Explain in detail about the types, classifications, and principles of surveying. (16)
- Or
- (b) Discuss the properties and types of bricks and cement concrete. (16)
17. (a) Discuss in detail about the different types of foundations. (16)
- Or
- (b) Explain the different types of floors. (16)

18. (a) (i) Explain with neat sketch the working principle of centrifugal pump. (10)  
(ii) Write the classification of turbines (6)

Or

- (b) Sketch the schematic arrangement of a nuclear power plant and explain its working. (16)

19. (a) Explain the construction and working principle of any one of the boiler with neat sketches. (16)

Or

- (b) Explain the working of a four stroke diesel engine with a neat sketch. (16)

20. (a) Explain with a neat sketch the construction and working of vapour compression refrigeration system. (16)

Or

- (b) (i) Draw the neat diagram of a split air conditioning system and explain its working. (10)

- (ii) Differentiate the vapour compression and vapour absorption refrigeration system. (6)

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