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Question Paper Code: 42705

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

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)
