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Question Paper Code: 41271

B.E. / B.Tech. DEGREE EXAMINATION, NOVEMBER 2015

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
- Ratio of stress to strain is
 - Poisson's ratio
 - Young's Modulus
 - Bulk Modulus
 - Modulus of elasticity
- 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 theoretically correct air fuel ratio for petrol engine is of the order of
 - (a) 6 : 1
 - (b) 9 : 1
 - (c) 12 : 1
 - (d) 15 : 1
8. A device used for increase the temperature of saturated steam without raising pressure is called
 - (a) Fusible Plug
 - (b) Stop valve
 - (c) Blow off cock
 - (d) Super heater
9. The value of COP in vapour compression cycle is
 - (a) Always more than unity
 - (b) Always less than unity
 - (c) Equal to unity
 - (d) None of the above
10. A refrigerant uses in vapour absorption refrigerator is
 - (a) Water
 - (b) Ammonia
 - (c) Aqua- ammonia
 - (d) Freon

PART - B (5 x 2 = 10 Marks)

11. Write the principle of surveying.
12. What are the advantages of buttress dam compared to solid gravity dam?
13. State the functions of air pre heater and condenser.
14. What is meant by scavenging in two stroke engines?
15. Define “ton of refrigeration”.

PART - C (5 x 16 = 80 Marks)

16. (a) State the properties and uses of sand, cement, concrete and steel sections. (16)
- Or
- (b) (i) Explain with neat sketches prismatic compass surveying. (12)
 - (ii) What are the various types of bricks based on quality? (4)
17. (a) (i) Explain various kinds of rubble masonry with neat sketches. (8)
 - (ii) Write short notes on columns. (8)

Or

- (b) Discuss in detail about the different types of foundations. (16)
18. (a) (i) Sketch the schematic arrangement of a nuclear power plant and explain its working. (12)
- (ii) List the merits and demerits of hydroelectric power plant. (4)

Or

- (b) (i) Explain with neat sketch the working principle of centrifugal pump. (10)
- (ii) Write the classification of turbines. (6)
19. (a) (i) Explain the working of a four stroke diesel engine with a neat sketch. (10)
- (ii) Write briefly about the fuel supply system used in S.I engine. (6)

Or

- (b) Explain the construction and working principle of any one of the boiler with neat sketches. (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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