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Question Paper Code: 50728

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Second Semester

Mechanical Engineering

15UME208 - BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to EEE branch)

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Which one is not a component part of dumpy level?
 - tilting level
 - adjusting leel
 - reduced level
 - hand level
- The standard size of first class brick is
 - 200mm x 100mm x 100mm
 - 190mm x 90mm x 90mm
 - 190mm x 90mm x 75mm
 - 190mm x 75mm x 75mm
- Pile based on material is
 - anchor pile
 - friction pile
 - end bearing pile
 - timber pile
- A vertical load carrying member is
 - beam
 - lintel
 - floor
 - column
- Steam coal is
 - pulverised coal
 - hard coke
 - non coking bituminous
 - anthracite coal
- Which is the basic raw material of the nuclear plants?
 - Thorium
 - Radium
 - Uranium
 - Plutonium

7. A four stroke petrol engine theoretically operates on
- (a) Otto cycle (b) Brayton cycle
(c) Joule cycle (d) Bell- Coleman cycle
8. The power developed by a diesel engine is not increased by
- (a) higher compression ratio (b) fine atomisation of fuel
(c) excess supply of air (d) supplying air at increased pressure
9. One ton of refrigeration implies that the machine has a refrigerating effect
- (a) 210 KJ/sec (b) 210 KJ/min (c) 210 KJ/hr (d) 210 KJ/day
10. In a window air conditioner the expansion device used is
- (a) capillary tube (b) thermostatic expansion device
(c) float valve (d) automatic expansion valve

PART - B (5 x 2 = 10 Marks)

11. What are the objectives of surveying?
12. Define deep foundation.
13. Give four important factors to be considered for selecting hydro electric power plant.
14. Why fuel is to be injected in a CI engine?
15. Give some examples for a refrigerant.

PART - C (5 x 16 = 80 Marks)

16. (a) What are the different operations to be performed in chain surveying? What are the advantages and disadvantages of chain surveying? (16)

Or

- (b) What are the different types of cement? Explain their properties and uses. (16)

17. (a) Discuss different types of foundation with the help of neat sketches. (16)

Or

- (b) State and explain the different types of stresses. (16)

18. (a) Explain the different types of circuit used in steam power plant. (16)

Or

(b) Write briefly the working of a single acting reciprocating pump with a neat sketches. (16)

19. (a) Classify the IC engine, with a neat sketch show the parts of an IC engine. (16)

Or

(b) Explain with a neat sketch the principles of Battery ignition system. (16)

20. (a) (i) Define the terms (i) Ton of refrigeration (ii) Coefficient of performance (iii) Capillary tube (iv) Condenser (v) Expansion valve and (vi) Cooling load. (12)

(ii) What are the properties of a good refrigerant. (4)

Or

(b) Explain the working principle of window air conditioner with a neat sketch. (16)
