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Question Paper Code: R2726

B.E./B.Tech. DEGREE EXAMINATION, NOV/DEC 2024

First Semester

Electrical and Electronics Engineering

R21UME226- BASIC CIVIL AND MECHANICAL ENGINEERING

(Regulations R2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (5x 1 = 5 Marks)

1. Which of the following type of surveying is used for exploring mineral wealth? CO1- U
(a) Military surveying (b) Mine surveying
(c) Topographic surveying (d) Engineering surveying
2. A building can be mainly divided into how many components? CO2- U
(a) 2 (b) 3 (c) 6 (d) 8
3. The most abundantly available fossil fuel in India is _____. CO3- U
(a) Coal (b) Natural Gas (c) Petroleum (d) Oil
4. What is the combustion in spark ignition engine? CO3- U
(a) Heterogeneous (b) Laminar (c) Homogeneous (d) None of the above
5. Which of the following refers to the term C.O.P. of refrigeration? CO3- U
(a) Cooling for Performance (b) Coefficient of Performance
(c) Capacity of Performance (d) Co-efficient of Plant

PART – B (5 x 3= 15 Marks)

6. State the principles of surveying. CO1- U
7. List out the types of Brick masonry. CO2- U
8. Mention the purpose of surge tank in hydroelectric power plant. CO3- U
9. Compare petrol and diesel engines. CO3- U

10. Define Ton of Refrigeration. CO3- U

PART – C (5 x 16= 80 Marks)

11. (a) Explain with a neat sketch about 20m chain and other instruments in chain surveying. CO1-U (16)

Or

(b) Convert the following W.C.B to R.B CO1-U (16)
30°,120°, 240°,160°,300°,247°,328°,98°

12. (a) Explain the various types of Deep foundations. CO2-U (16)

Or

(b) Explain the various types of flooring. CO2-U (16)

13. (a) Illustrate the working of a reciprocating pump with a neat sketch. CO4-U (16)

Or

(b) Illustrate the functions, advantages, and disadvantages of a steam thermal power plant with a neat sketch. CO4-U (16)

14. (a) Classify the principle parts and functions of a Benson boiler with a neat sketch. CO5-U (16)

Or

(b) Identify the principle parts and functions of a four-stroke petrol engine with a neat sketch. CO5-U (16)

15. (a) Explain the working principle and performance of a window-type room air conditioner for a varying climate condition with a neat sketch. CO6-App (16)

Or

(b) Evaluate the working principle of a split-type room air conditioner and its suitability for residential use. CO6-App (16)