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**Question Paper Code:R1726**

B.E./B.Tech. DEGREE EXAMINATION, APRIL 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 - (10 x 1 = 10 Marks)

1. How many types of brick masonry are possible? CO1-U  
(a) 4 (b) 2 (c) 5 (d) 6
2. \_\_\_\_\_ colour creates nearness. CO1-U  
(a) White (b) Black (c) Blue (d) Red
3. An offset is a \_\_\_\_\_ distance of an object measured from the survey line. CO1-U  
(a) Lateral (b) Horizontal (c) Normal (d) Inclined
4. Earth dams are \_\_\_\_\_ in shape. CO1-U  
(a) Triangular (b) Rectangular (c) Trapezoidal (d) Circular
5. The most abundantly available fossil fuel in India is \_\_\_\_\_. CO1-U  
(a) Coal (b) Natural Gas (c) Petroleum (d) Oil
6. In a gas turbine plant, a regenerator increases \_\_\_\_\_. CO1-U  
(a) Work output (b) Pressure ratio  
(c) Thermal efficiency (d) all of the mentioned
7. Which of the following does not relate to spark ignition engine? CO1-U  
(a) Spark plug (b) Carburetor (c) Fuel injector (d) Ignition coil
8. Which is the most effective air cleaner in the case of diesel engines? CO1-U  
(a) Whirl type (b) Oil bath type (c) Wet type (d) Dry type

9. Which of the following refers to the term C.O.P. of refrigeration? CO1-U
- (a) Cooling for Performance                      (b) Coefficient of Performance  
(c) Capacity of Performance                      (d) Co-efficient of Plant
10. In larger industrial and commercial reciprocating compression systems, CO1-U  
refrigerant widely used is\_\_\_\_\_.
- (a) Ammonia    (b) Carbon dioxide  
(c) Sulphur dioxide                                      (d) R-12

PART – B (5 x 2= 10 Marks)

11. Define the principles of Surveying. CO1-U
12. Compare stone masonry and Brick masonry. CO3-Ana
13. Point out the function of Draft tube in hydroelectric power plant. CO3-Ana
14. List out the main components of an I.C. Engine. CO1-U
15. Compare vapour absorption refrigeration and vapour compression refrigeration CO3-Ana  
system.

PART – C (5 x 16= 80 Marks)

16. (a) Describe the methods for improving the bearing capacity of soils. CO1-U (16)
- Or
- (b) Explain the factors to be considered for the site preparation for CO1-U (16)  
construction.
17. (a) Describe in details the different types of floor suitable for residential CO1-U (16)  
and commercial building.
- Or
- (b) Describe in details the different types of pitched roof coverings. CO1-U (16)
18. (a) Describe the functions, advantages and disadvantages of a Steam CO1-U (16)  
thermal power plant with neat sketch.
- Or
- (b) Describe the functions, advantages and disadvantages of a diesel CO1-U (16)  
engine power plant with neat sketch.
19. (a) Describe the principal, parts and functions of a Four Stroke Petrol CO1-U (16)  
engine with neat sketch.

Or

(b) Describe the principal, parts and functions of a Two Stroke Compression ignition (CI) engine with neat sketch. CO1-U (16)

20. (a) Explain with neat sketch the working principle of split type room air Conditioner. CO1-U (16)

Or

(b) Explain with neat sketch the working principle of window type room air conditioner. CO1-U (16)

