

PMM/KS/15/7066

Faculty of Engineering & Technology

Fifth Semester B.E.(Electrical Engg.) (C.B.S.)

Examination

UTILIZATION OF ELECTRIC ENERGY (U.E.E.)

Time : Three Hours]

[Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
 - (2) Assume suitable data wherever necessary.
 - (3) Illustrate your answers wherever necessary with the help of neat sketches.
 - (4) Use of non-programmable electronic calculator is permitted.
1. (a) What are the different methods of electric heating?
Explain with details. 7
- (b) Explain coreless type Induction furnace with its applications and advantages. 6

OR

2. (a) What are the different types of Arc furnaces ?
Explain any one with details. 7
- (b) Explain the principle of Dielectric heating with its application and advantages. 6

3. (a) Describe classification of Welding Process. What are the advantages and disadvantages of Welding? 7

(b) Explain Seam and Butt Welding with neat diagram and details. 6

OR

4. (a) Explain metal arc welding with neat diagram and details. 7

(b) Explain laser beam welding and give its advantages and disadvantages. 6

5. (a) Define : 3

(i) Illumination

(ii) Solid angle

(iii) Lamp efficiency.

(b) Explain laws of illumination. 5

(c) What is CRI ? What are the different energy efficient lighting system ? 6

OR

6. (a) Explain Polar Curves of illumination. 6

(b) Estimate the number and wattage of lamps which would be required to illuminate a workshop space 60 m × 15 m by means of lamp which mounted

5 meter above the working plane. The average illumination required is 100 Lux. Coefficient of utilization = 0.42, Maintenance factor = 0.78, luminous efficiency = 16 lumen/w, space and height ratio = unity. 8

7. (a) Explain domestic refrigeration with neat diagram. 6

(b) Give brief idea about desert cooler along with its advantages and disadvantages. 7

OR

8. (a) Explain Summer Air Conditioning System with neat diagram. 6

(b) Explain Central Air Conditioning System with neat diagram and details. 7

9. (a) Explain the different types of Fan with details. 7

(b) What are the Flow Control Strategies of Fans ? 6

OR

10. (a) What are Pump Curves and System Characteristics of Pumps ? 6

(b) State energy conservation opportunities in Pumping System. 7

11. (a) What is Compressor Air ? Explain different types of Compressor. 7
- (b) Explain Compressor efficiency with details. 7

OR

12. (a) Explain the principal operation of diesel engine with neat sketches. 7
- (b) State the factors considered while selecting the site for diesel generating system. 7