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**6th Sem / Branch : Electrical Engg./Power Station  
Engg./Elect & Eltx. Engg.  
Sub. : Utilization of Electrical Energy**

Time : 3Hrs.

M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Lux is the unit of.  
a) Utilization factor      b) Luminous flux  
c) Luminous intensity    d) Illumination
- Q.2 The electrode used for direct resistance heating are made of  
a) Mild steel                b) Copper  
c) Carbon                  d) Nickel
- Q.3 In dielectric heating, current flows through  
a) Metallic conductor  
b) Ionic discharge between dielectric medium and metallic conductor  
c) Dielectric  
d) Air
- Q.4 The basic electrical requirement in arc welding is that there should be  
a) High open circuit voltage  
b) No arc blow  
c) DC power supply  
d) Coated electrodes

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- Q.5 Power supply required for electrolytic processes is  
a) Alternating current (100-200A) at very low voltage of 10 Volt.  
b) Direct current (100-200 A) at very high voltage.  
c) direct current (100-200A) at very low voltage (10-12V)  
d) Alternating current at very high voltage
- Q.6 Which of the following motors is used in household refrigerators?  
a) DC shunt motor  
b) Reluctance Motor  
c) Single phase induction motor  
d) Synchronous motor
- Q.7 During regenerative braking of electric motor, they are  
a) Disconnected from the supply  
b) Reverse connected to the supply  
c) Made to stop  
d) Made to run as generator
- Q.8 In individual drive  
a) Each operator has complete control on his machine  
b) No load losses are eliminated  
c) The initial cost is less than that of group drive  
d) Both A and B
- Q.9 The speed time curve for the urban services has no:  
a) Coasting period              b) Free running period  
c) Braking period              d) Acceleration period

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- Q.10 What is the frequency of single phase traction system.  
 a) 450 Hz                      b) 16.67 Hz  
 c) 452.5 Hz                      d) 50 Hz

### SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Define electric heating.  
 Q.12 MIG stands for \_\_\_\_\_.  
 Q.13 Seam welding is a type of \_\_\_\_\_ welding.  
 Q.14 The process of covering the articles made of inferior metals by a thin coating of superior metal is called \_\_\_\_\_.  
 Q.15 One ton of Refrigeration = \_\_\_\_\_ Kilocalories/hour.  
 Q.16 Plugging can be applied to synchronous motors with damper winding. (True/False)  
 Q.17 EMU stands for \_\_\_\_\_.  
 Q.18 Pentagraph is mounted on the bottom of vehicle.  
 Q.19 For electric traction 25KV, 25 Hz single phase to direct current system is commonly used. (True/False)  
 Q.20 Which motor is used in lift.

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 State the principle and working of Microwave Oven.  
 Q.22 Write a short note on infrared heating.  
 Q.23 State and explain laws of illumination.

- Q.24 Write the main requirement of proper lighting system.  
 Q.25 Give a list of equipment required for arc welding.  
 Q.26 Differentiate between resistance welding and arc welding.  
 Q.27 Write the applications of anodizing.  
 Q.28 Draw the electric circuit used in water cooler.  
 Q.29 Define Belt and Gear drive.  
 Q.30 Write the requirements to select the appropriate drive used in paper mills.  
 Q.31 Explain any accessories used in Overhead Electric traction system.  
 Q.32 Write a short note on metro railways.  
 Q.33 Explain the braking methods used in electric locomotives.  
 Q.34 Explain the process of electro-deposition.  
 Q.35 Enlist the welding equipment.

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Draw and explain the electric circuit used in air conditioner.  
 Q.37 Draw the block diagram of electrical locomotive and describe various equipments and accessories used.  
 Q.38 Explain in brief various FKW motors and their applications.