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**5th Sem / Branch : Electrical 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 Dielectric loss depends upon (COE1)

- a) Voltage
- b) Frequency
- c) Voltage and frequency
- d) Electrode material

Q.2 Core less induction furnace requires (COE1)

- a) Low frequency
- b) High frequency
- c) High power
- d) Low power

Q.3 Which of the following heating method has max Power factor (COE1)

- a) Arc heating
- b) Induction heating
- c) Dielectric heating
- d) Resistance heating

Q.4 Tig welding is suited for welding (COE2)

- a) Stainless steel
- b) Carbon steel
- c) Aluminium
- d) None of the above

Q.5 In electrolysis salt solution is ionized into (COE3)

- a) Ions
- b) Cathode
- c) Holes
- d) Anode

Q.6 Size of AC is given in (COE4)

- a) Liter
- b) Tones
- c) Length of conditioner
- d) Watt

Q.7 Best suited motor for the traction work is (COE6)

- a) Slip ring IM
- b) DC shunt motor
- c) DC series motor
- d) Synchronous motor

Q.8 Tractive effort can be increased (COE6)

- a) By increasing supply voltage
- b) By using KW motors
- c) Increasing dead weight
- d) Both A & C

Q.9 Induction furnace work only on (COE1)

- a) Ac
- b) Dc
- c) Ac Dc both
- d) None of these

Q.10 Braking used in locomotive is (COE6)

- a) Regenerative braking
- b) Plugging
- c) Rheostat braking
- d) None

**SECTION-B**

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

Q.11 Induction furnace works on the production of \_\_\_\_\_ Current. (COE1)

(1)

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(2)

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- Q.12 Infra red heating is also called \_\_\_\_\_ heating. (COE1)
- Q.13 EMU stands for \_\_\_\_\_. (COE6)
- Q.14 Motor used for textile industry is \_\_\_\_\_. (COE5)
- Q.15 Motor used in domestic refrigerator is \_\_\_\_\_ (COE5)
- Q.16 Size of the air conditioner is given in \_\_\_\_\_. (COE4)
- Q.17 Non consumable electrode \_\_\_\_\_ is used in TIG welding. (COE2)
- Q.18 Most common used current collector is \_\_\_\_\_ (COE6)
- Q.19 The negatively charged ions are called \_\_\_\_\_. (COE3)
- Q.20 Define refrigerant. (COE4)

### SECTION-C

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

- Q.21 What are refrigerants? What are the desirable properties of refrigerants? (COE4)
- Q.22 What is schedule speed. What are the factors affecting schedule speed. (COE6)
- Q.23 What are the desirable characteristics required in traction motor. (COE6)
- Q.24 State merits of electric braking over mechanical braking. (COE6)
- Q.25 Explain principle of dielectric heating. Give three Applications. (COE1)
- Q.26 What are the advantages of using coated electrodes. (COE2)

- Q.27 Define electro deposition process. Write factors affecting electro deposition. (COE3)
- Q.28 Differentiate AC and DC electric welding. (COE2)
- Q.29 Enlist specifications of commonly used motors. (COE5)
- Q.30 Explain characteristics of different kind of mechanical load. (COE5)
- Q.31 Draw the electric circuit used in air conditioner. (COE4)
- Q.32 Explain in brief Galvanizing and its applications. (COE3)
- Q.33 What are the different types of resistance electric welding. (COE2)
- Q.34 Explain why the supply used for an arc furnace is low voltage high current type. (COE1)
- Q.35 Explain in brief solar heating. (COE1)

### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 What is electric heating. Explain core type and coreless type induction heating. (COE1)
- Q.37 With the help of neat diagram, explain the working of various parts of electric locomotive. (COE6)
- Q.38 How do you select a motor for the particular job. Also explain method of power transfer using chain drive and belt drive. (COE5)