Q.22 Mention the advantages of Electric Drive.
Q.23 Describe the constructional features of a resistance oven.
Q.24 Give some applications of induction heating.
Q.25 Write a short note on solar heating.
Q.26 Explain the principle of electric spot welding.
Q.27 Describe the basic components of dc and ac welding sets.
Q.28 Write, how carbon arc welding is differ from metallic arc welding.
Q.29 Draw the circuit diagram of water cooler.
Q.30 Enlist the different system of traction.
Q.31 Mention the factors which are affected the schedule speed of traction system.
Q.32 Write a short note on metro railways.
Q.33 Explain the braking methods of electric locomotives.
Q.34 State the laws of electrolysis.
Q.35 State the principle of galvanizing.

SECTION-D

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

Q.36 Draw block diagram of electric locomotive and explain the equipment and accessories used.
Q.37 Explain the hydrogen arc welding method and its applications.
Q.38 Explain the complete process of electro-deposition of metal such as cleaning, operation, polishing and buffing.

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4th Sem / Branch : Elect.

Subject:- Utilization of Electrical Energy

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 In Induction heating which of the following is of high value?
a) Frequency b) Current
c) Voltage d) Power factor

Q.2 In dielectric heating current flows through
a) Air
b) Dielectric
c) Metallic conductor
d) Ionic discharge between dielectric medium and metallic conductor

Q.3 In seam welding
a) The work piece is fixed and disc electrodes as
b) The work piece moves but rotating electrodes are fixed
c) The electrodes used are of disc or roller shape
d) Either (a) or (b) and (c)

Q.4 Carbon arc welding is suitably particularly for _____ metals.
a) Ferrous b) Non-ferrous
c) Both a and b d) None of the above

Q.5 The capacity if a refrigerating machine expressed as
a) Inside volume of the cabinet
b) Lowest temperature attained
c) Gross weight of machine in tones
d) Rate of abstraction of heat from the space being cooled

Q.6 A domestic mixer uses the following motor
a) Induction motor
b) Reluctance motor
c) Universal motor
d) Permanent magnet synchronous motor

Q.7 When an electric train is moving down a hill, the dc motor will operate as a dc
a) Series motor b) Series generator
c) Shunt motor d) Shunt generator

Q.8 The condition of regenerative braking can be achieved by
a) Speed higher than no-load speed of overhauling load.
b) Increasing the excitation while supply voltage remains constant
c) Increasing the armature current
d) Either (a) or (b)

Q.9 Basically electroplating means
a) Formation of ions by two metallic plates in the acidic liquid
b) Electro-deposition of metal on electrodes.
c) Electro-deposition of metal upon metallic surface
d) None of the above

Q.10 The chief requirements of main line railway services are
a) High maximum speed
b) Minimum cost of overhead structure
c) High acceleration and braking retardation
d) Both a and b

SECTION-B

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

Q.11 Name the different modes of heat transfer.

Q.12 Write the materials widely used as heating element.

Q.13 Define welding electrode.

Q.14 For direct core type induction furnaces high frequency supply is essential. (True/False)

Q.15 The main function of a condenser in a refrigeration system is to remove the heat absorbed by the evaporator. (True/False)

Q.16 Cost of ac electrification of track is more than that of dc electrification. (True/False)

Q.17 A desert cooler operates on the principle of _____ cooling.

Q.18 Define Electro-deposition.

Q.19 The speed-time curve drawn of traction system taking speed on the _____ axis and time on _____ axis.

Q.20 Define Electric Drive.

SECTION-C

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

Q.21 Write the various factors which decide the choice of an electric drive for industrial application.