

Question Bank on

UTILIZATION OF ELECTRICAL ENERGY AND TRACTION

A Course in 6<sup>th</sup> semester of diploma in ELECTRICAL ENGINEERING



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Question Bank

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A ELECTROLYTIC PROCESS :-

Short Questions

- 1) what is chemical equivalent weight?
- 2) what is electrochemical equivalent?
- 3) what is current efficiency?
- 4) what is energy efficiency?
- 5) what are the factors affecting the amount of electro-deposition?
- 6) what are the factors governing better electro-deposition? Explain throwing power.
- 7) what is (i) Refining of metals?  
(ii) Electrotyping?
- 8) what is (i) electroforming?  
(ii) electrocleaning?

Long Question

- 1) Explain principles of electrodeposition.
- 2) Explain Faraday's law of electrolysis.

## (B) Electrical Heating :-

### short questions

- 1) what are the modes of heat transfer?
- 2) what is Stefan-Boltzman law?
- 3) Difference between H.T strike method & L.T strike method of arce.
- 4) Difference between Direct- arce furnace & indirect arce furnace.
- 5) Explain skin Effect.
- 6) what is application of dielectric heating in plywood industry, Dehydration of food, Electro-medical application, Bookbinding.
- 7) what is micro-wave heating.
- 8) what is micro-oven. Explain with Block diagram.

### Long questions

- 1) what is resistance heating: Explain direct & indirect resistance heating.
- 2) what is arce furnace. Explain ~~its~~ all type of arce furnace.
- 3) Explain principle of induction Heating.



(3)

4) Explain various types of induction furnace.

5) what is dielectric heating? Explain its principle.

6) Explain application of dielectric heating.

(C) Principles of Arc Welding :-

Short question

1) Explain principle of Arc welding.

2) difference between AC & DC welding.

3) what is AC & DC welding equipments & DC welding equipments.

4) what are the advantages of DC arc welding machine.

5) what is metallic arc welding?

6) what is carbon arc welding?

7) what is Atomic hydrogen arc welding?

8) what is Helium or argon arc welding?

Long question :-

1) Explain various types of electric resistance welding process.

## (D) ILLUMINATION :-

### Short questions

- 1) what is luminous intensity?
  - 2) what is lumen?
  - 3) what is intensity of illumination?
  - 4) what is MHCP?
  - 5) what is MSCP?
  - 6) what is MHSCP?
  - 7) what is solid angle?
  - 8) what is luminous efficiency?
  - 9) what is maintenance factor?
  - 10) what is depreciation factor?
  - 11) Explain polar curve.
  - 12) what are the factors affecting design of lighting scheme?
  - 13) what is Basic principles of light-control?
- with  
Definition,  
denotation,  
formula,  
unit,

### Long Question

- 1) Explain Laws of illumination.
- 2) Explain filament lamp. what is effect of voltage variation on it.
- 3) Explain principle & working of fluorescent tube.



4) what is sodium vapour lamp

5) Explain <sup>high pressure</sup> mercury vapour lamp.

6) Explain Neon sign lamps.

7) practice <sup>some</sup> numerical problems from book & previous year question papers.

## (E) Industrial Drives

### short questions

1) Difference between individual & group drive.

2) Explain block diagram of electric drive.

3) How to choose electric drive.

4) Application of (i) DC motor

(ii)  $3\phi$  induction motor

(iii)  $3\phi$  synchronous motor

(iv)  $1\phi$  induction motor

(v) series motor

(vi) universal motor

(vii) repulsion motor

### \* Long Question

1) Explain starting & running characteristics of DC & AC motor.

## (F) ELECTRIC TRACTION

Long ~~short~~ question :-

- 1) Explain different system of Traction.
- 2) Explain system of Track electrification.
- 3) Explain running characteristics of DC & AC traction motor.
- 4) Explain control of motor,
  - i) Tapped field control
  - ii) Rheostatic control
  - iii) Series parallel control
  - iv) Metadyne control
- 5) Explain
  - i) Regenerative braking
  - ii) Breaking with  $\phi$  series motor
  - iii) Magnetic braking