

CP-1 :- Electrolytic process

- ① In electrolytic processes, the electrical energy is converted into chemical energy.
- ② The solution of a salt used for electrolytic process is called electrolyte.
- ③ The electrode connected to positive terminal is called anode & for the negative terminal is called as cathode.
- ④ The weight of a substance liberated during electrolysis is proportional to the product of current & time.
- ⑤ In the equation $w \propto It$, the sign of proportionality can be replaced by a constant Z and called as electro-chemical equivalent.
- ⑥ The ratio of the theoretical value of energy to practical value is called energy efficiency.
- ⑦ The current required for electro-deposition is less than that required for extraction of metals.
- ⑧ The hydrogen and metal ions carrying positive charge are known as cations.
- ⑨ The other name for negative ions is Anions.
- ⑩ Electro-deposition is obtained on cathode.
- ⑪ Power supply required for electrolytic processes is Direct current and at very low voltage.
- ⑫ The voltage required to pass the necessary current through an electrolyte cell is of the order of 1 to 2 volt.
- ⑬ The current efficiency is defined as Actual quantity of substance liberated or deposited to Theoretical quantity of substance.
- ⑭ Mopping is known as Polishing.
- ⑮ Current density = current/Area & Unit is Amp/m².

CP-2-: Electric heating

- ① The electric heating is Economical.
- ② The material used for the heating element of an oven should have High resistivity.
- ③ The insulating materials can be heated only by Electricity.
- ④ The temperature co-efficient of resistance of the material of heating element should be Low.
- ⑤ From sun, we get energy through Radiations.
- ⑥ The electrodes used in arc furnaces are of Carbon.
- ⑦ Induction furnaces may be core type or Coreless type.
- ⑧ The heating method using infra-red radiation is called the Radiant heating.
- ⑨ The microwave heating used radiations of very short penetrates.
- ⑩ The frequency of microwaves is very high.
- ⑪ Di-electric heating can be only done at High frequency.
- ⑫ Induction furnaces can work only on A.C supply.
- ⑬ Heating element used in household appliances are made of Nichrome.
- ⑭ In flammable articles like plastics can safely be heated by using di-electric heating processes.
- ⑮ Indirect furnaces are not built in large sizes.
- ⑯ Di-electric heating works on A.C supply and not on D.C. supply.
- ⑰ Induction heating is used for heating magnetic or non-magnetic materials.
- ⑱ The di-electric loss depends upon voltage & frequency.
- ⑲ The different modes by which heat is transferred are conduction, Convection and Radiation.

CP-3 (Electric welding)

- ① In electric welding heat is produced either by passing electric current or by striking an arc.
- ② There are two main methods of electric welding Resistance welding and arc welding.
- ③ In resistance welding current is passed through the metal pieces to be joined.
- ④ The pipes, rods and wires can be welded easily by butt welding.
- ⑤ In arc welding, heat is produced mainly by electric arc.
- ⑥ Resistance welding can be employed for production work.
- ⑦ The supply source used for arc welding must have drooping characteristics.
- ⑧ The power factor of the welding transformer is very low.
- ⑨ Project welding uses the same equipment as the spot welding.
- ⑩ The welding transformer must have a High leakage reactance.
- ⑪ In atomic hydrogen welding, the electrodes used are made of Tungsten.
- ⑫ A.C supply is used in atomic hydrogen welding.
- ⑬ Seam welding can be defined as series of continuous spot welds.
- ⑭ The transformer used in a welding set is step down transformer.
- ⑮ Butt welding is used for welding metal pieces.
- ⑯ Rolling electrodes are specifically used for seam welding.
- ⑰ The arc has negative resistance characteristics.

CP-4 (Illumination)

- ① The illumination is measured in LUX.
- ② Sodium vapour lamp is a discharge lamp.
- ③ The ability of lamps to convert input watts into lumens is called luminous efficiency.
- ④ Expand CFL, compact fluorescent lamp.
- ⑤ Neon lamps are basically gas discharge lamps.
- ⑥ Integrating sphere is commonly used for measuring mean spherical candle power.
- ⑦ Power factor of a sodium vapour lamp is nearly 0.3 lagging.
- ⑧ With the increase in voltage, life of the lamp decreases.
- ⑨ Candle is the unit of luminous intensity.
- ⑩ The function of a choke in a fluorescent lamp is to produce high voltage surge.
- ⑪ Solid angle is measured in steradian.
- ⑫ The unit of luminous flux is lumens.
- ⑬ An electric lamp having max. running cost and minimum initial cost is known as incandescent lamp.
- ⑭ Solid angle subtended by a sphere at its centre is 4π .
- ⑮ For light radiation, the temp. of a hot filament should be closer to 2500°C .
- ⑯ Rate of light energy radiations from a light source is called luminous flux.
- ⑰ Colour of light depends upon frequency and wave length.
- ⑱ Operation of discharge lamps produces radio interference.
- ⑲ Sodium vapour lamps are used where high level of illumination is required.
- ⑳ Inert gas mainly used in bulbs is argon.

CP-5 (Industrial Drives)

- ① In individual drive, the operator has complete control of his machine.
- ② In group drive, number of machines are rotated through belts and pulleys by a big main motor.
- ③ Starting torque of a d.c. series motor is very high.
- ④ In a centrifugal pump, the mechanical load is lifting.
- ⑤ The characteristics of a d.c. compound motor are in between the series and shunt motor.
- ⑥ The torque of a d.c. shunt motor increases with the increase in load.
- ⑦ Speed of the Schrage motor can be controlled by shifting the brushes.
- ⑧ If the field of a synchronous motor is over excited, the power factor will be leading.
- ⑨ Starting torque of a three phase induction motor can be increased by increasing the rotor resistance.
- ⑩ For small domestic appliances universal motors are generally used.
- ⑪ The reversal of rotation of motor for electric braking is known as plugging.
- ⑫ For traction work, the best suited motor is d.c. series motor.
- ⑬ Generally in rolling mills, the type of braking applied is plugging.
- ⑭ For punch and shear machines d.c. compound motor is used.
- ⑮ In lifting, torque is independent of speed.
- ⑯ A d.c. series motor can safely started without load.
- ⑰ Starting torque of repulsion motor is high.

CP-6 (Electric Traction)

- ① For main line railways single phase compensated series motor is used.
- ② The modern electrification of track is done for composite system.
- ③ The most used traction motor is D.C. series motor.
- ④ The system of traction involving the use of electricity is called the Drop.
- ⑤ For regeneration braking it is necessary for supply voltage to series motor.
- ⑥ In underground traction, the supply system is 500V to 1000V D.C.
- ⑦ In suburban trains, the traction motors are installed on locomotive only.
- ⑧ In India, Diesel locomotives for traction systems are manufactured at Varanasi.
- ⑨ Long distance railways operates on 25 kV, 1- ϕ , A.C.
- ⑩ A drive having mixed properties of a d.c. shunt and D.C. series is cumulatively compound D.C. motor.
- ⑪ A d.c. motor showing linear load torque characteristics is a D.C. Shunt motor.