

- Q.24 What are the advantages of Electrical energy over other types forms of energies ?
 Q.25 State Ohm's Law alongwith the conditions required for ohm's Law.
 Q.26 What is the difference between A.C. and D.C. ?
 Q.27 State and explain Faraday's law of Electromagnetic Induction.
 Q.28 Explain with diagram what happened to a current carrying conductor when it is placed in a magnetic field?
 Q.29 What are the advantages of a 3-Phase system over a single phase system ?
 Q.30 Write down the causes of Low Power Factor alongwith disadvantages of it.
 Q.31 What do you mean by Primary and Secondary cells ?
 Q.32 State and explain Kirchhoff's Law .
 Q.33 What are the steps that are to be taken for the care and maintenance of a Lead Acid Battery ?
 Q.34 What is Electro-magnetic Induction? How many types of emf is induced by it ? Explain.
 Q.35 Derive an expression for the inductances connected in series.

SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
 Q.36 Derive relationship between phase voltage and line voltages; phase current and line current in a star connected 3-Phase system.
 Q.37 Describe with diagram power measurement in a 3-Phase circuit by using two wattmeter method.
 Q.38 What would be the equation for current as well as power when alternating current is applied to a RL series Circuit.

(00)

(4)

120926

No. of Printed Pages : 4

Roll No.

120926

**2nd Sem / Branch : Elect, Power Stat, Engg.,
Elect, & Eltx Engg., Fire Tech & Safety**

Subject:- Fundamentals of Electrical Engineering

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 The electrolyte used in Nickel cadmium cells is:
 a) Dilute Sulphuric Acid
 b) Potassium Hydroxide
 c) Hydro Chloric Acid
 d) Nitric Acid
 Q.2 What is the unit of mmf?
 a) Ampere Turns (AT) b) Watt
 c) Joule d) Volts
 Q.3 The value of frequency for alternating current in India is _____.
 a) 60 Hz b) 0 Hz
 c) 50 Hz d) 40 Hz
 Q.4 In a A.C. circuit, in a purely resistive circuit, the voltage is _____ with the current.
 a) Out of phase by 120° b) In Phase
 c) Lag d) Lead
 Q.5 Which law states that, "Whenever a conductor is placed in a varying magnetic field, an electromotive force is induced"
 a) Lenz's Law b) Ohm's Law
 c) Faraday's Law d) Fleming's Law

(1)

120926

Q.6 Power in a three phase system is given by:

- a) 3 Watt Meter Method
- b) 2 Watt Meter Method
- c) Using 3 Phase Watt Meters
- d) Any of above Method

Q.7 The Power factor of a purely resistive load is:

- a) Unity b) Lagging
- c) Zero Lagging d) Zero Leading

Q.8 Which form of energy can be easily converted into other forms of energy.

- a) Mechanical Energy b) Electrical Energy
- c) Chemical Energy d) Heat Energy

Q.9 The Formula for two equivalent resistance in parallel is given by.

- a) $R=R_1+R_2$
- b) $R=\frac{R_1 \times R_2}{R_1+R_2}$
- c) $R=\frac{R_1+R_2}{R_1 \times R_2}$
- d) $R=R_1 \times R_2$

Q.10 A sinusoidal wave repeat itself after an interval of

- a) 180° Electrical
- b) 180° Mechanical
- c) 360° Electrical
- d) 360° Mechanical

SECTION-B

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

Q.11 The reluctance of a magnetic circuit is similar to _____ of an electric circuit.

Q.12 Average power dissipated in a pure inductor is _____. (2)

Q.13 In a 3-Phase Delta connected system V_L is equal to _____.

Q.14 Ceiling fans in our houses operate on D.C. (True/False).

Q.15 What do you mean by Power Factor?

Q.16 The red mark on the terminal of a battery indicates a negative terminal. (True/False).

Q.17 Define Permeability with reference to magnetic circuit.

Q.18 On discharging the specific gravity of the electrolyte in a secondary cell is _____.

Q.19 What is conductance?

Q.20 Define Charge with its unit.

SECTION-C

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

Q.21 What is Resistance? Derive an expression for two resistances connected in parallel with each other.

Q.22 Match the following electrical quantities with their units

Quantity	Units
1. Voltage	Ohms
2. Current	Joule
3. Resistance	Watt
4. Power	Ampere
5. Energy	Volts

Q.23 Define the following terms with reference to A.C. circuits.

- a) Instantaneous Value b) Average Value
- c) R.M.S. Value d) Form Factor
- e) Admittance