

- Q.27 Derive an equation for current when alternating current is applied to a purely inductive circuit.
- Q.28 Explain with diagram what happened with the two current carrying conductors when they are placed in a magnetic field?
- Q.29 What are the applications of Electrical Energy?
- Q.30 What is power Factor? What is the practical significance of it?
- Q.31 What is Energy? What are the different forms of energy?
- Q.32 Calculate the self inductance of a coil in which an emf of 860 V is induced on reversing a current of 100 mA in 10 ms.
- Q.33 Explain Faraday's law of Electromagnetic Induction.
- Q.34 What are the steps to be taken for care and maintenance of a Lead Acid Battery?
- Q.35 What is Ohm's Law? What are the conditions for ohm's Law?

#### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Explain the diagram working principle, construction and application of a Lead Acid Battery.
- Q.37 Write a short note on the following:
- Self and Mutually induces emf.
  - Energy stores in an Inductor.
- Q.38 Derive relationship between phase voltage and line voltages; phase current and line current in a Delta connected 3-phase system.

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Roll No. ....

### 2nd Sem / Elect, Power Stat. Engg., Elect. & Eltx Engg., Fire Tech & Safety

#### Subject:- Fundamental of Electrical Engineering

Time : 3Hrs.

M.M. : 100

#### SECTION-A

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

- Q.1 The type of current which forms sinusoidal wave shapes is
- D.C
  - A.C
  - Both a & b
  - None of these
- Q.2 The resistance of a material is directly proportional to length and \_\_\_\_\_.
- Conductivity
  - Resistivity
  - Permeability
  - Inductivity
- Q.3 The type of cell in which chemical action is reversible is called \_\_\_\_\_.
- Solar Cell
  - Photo Voltaic Cell
  - Primary Cell
  - Secondary Cell
- Q.4 On which factors does the inductance of a coil depends.
- Number of turns & length of the coil
  - Area of cross section
  - Permeability of core
  - All of these
- Q.5 The unit of flux density is
- Wb/m<sup>2</sup>
  - I<sup>2</sup>R
  - 1/2 L<sup>2</sup> I
  - 1/2 LI<sup>2</sup>

- Q.6 The maximum value attained by an alternating quantity during a cycle is called \_\_\_\_\_  
 a) R.M.S Value                      b) Peak value  
 c) Average Value                      d) Instantaneous value
- Q.7 Various phases in a three phase system have a phase difference of \_\_\_\_\_  
 a)  $60^\circ$                                       b)  $90^\circ$   
 c)  $120^\circ$                                       d)  $180^\circ$
- Q.8 Three phase system is generally used for generation, transmission and distribution of electrical energy because  
 a) It is very efficient than single phase system  
 b) It is cheaper than single phase system.  
 c) It has a smaller size of machine for the same rating  
 d) All of the above factors.
- Q.9 The emf of a fully charges lead acid cell is  
 a) 1.21 Volt                                      b) 1.8 Volt  
 c) 2.1 Volt                                      d) 1.4 Volt
- Q.10 A.C can not be directly used for  
 a) Lighting                                      b) Heating  
 c) Battery charging                      d) Running of motors

#### SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Pulsating D.C. is the purest form of D.C.(True/False).
- Q.12 The maximum and minimum value of power factor can be \_\_\_\_\_ and \_\_\_\_\_.
- Q.13 In a cell the flow of current through electrolyte is due to the movement of \_\_\_\_\_.

- Q.14 What is Magnetic Circuit?
- Q.15 Write the equation for alternating voltage in an A.C circuit.
- Q.16 The formula for calculating Power Factor when True Power and Apparent Power is given is \_\_\_\_\_
- Q.17 What is Hysteresis loss?
- Q.18 In a Motor the \_\_\_\_\_ energy is converted to \_\_\_\_\_ energy.
- Q.19 Is Flux in magnetic circuit is analogous to current in an electric circuit (Yes/No).
- Q.20 The formula for two inductor connected in series with each other is \_\_\_\_\_.

#### SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 State and explain Fleming's Left and Right Hand Rule.
- Q.22 What are the advantages of A.C. over D.C.?
- Q.23 If there are two resistors having resistances  $R_1 = 6 \Omega$  &  $R_2 = 4 \Omega$ . What will be there equivalent resistance when they are  
 a) Connected in series    b) Connected in Parallel
- Q.24 Define following terms:  
 a) Susceptance                      b) Admittance  
 c) Conductance                      d) Voltage  
 e) Energy
- Q.25 What are the methods used for charging of a Lead Acid battery?
- Q.26 What is Resistance? What are the factors that affect the resistance?