

Q.1 Fill in the blanks (any 6)**6**

- a) _____ is the standard frequency in India.
i. 50 Hz ii. 60 Hz iii. 120 Hz
- b) 'U' shaped magnets are used in _____.
i. loudspeakers ii. moving coil instruments iii. making smaller magnets
- c) The D.O.R. of a DC Motor can be changed by changing the _____.
i. field current ii. armature current
iii. either field or armature current
- d) _____ changes its direction and magnitude periodically.
i. A.C. ii. D.C.
- e) In a capacitor, the current _____ the voltage.
i. leads ii. lags
- f) The unit of impedance is _____.
i. Ohm ii. farad iii. Mho
- g) An inductive coil of 0.35H is connected to a 220V, 50Hz supply. Its inductive reactance is _____.
i. 110Ω ii. 220Ω iii. 55Ω

Q.2 Attempt any four**8**

- a) Give the classification of DC Generator.
- b) State the advantages of electromagnetism.
- c) Draw a neat and labelled diagram of DC Generator.
- d) What the different types of armature winding.
- e) State faraday's first and second laws of electromagnetic induction .

Q.3 Attempt any four**8**

- a) Draw a neat and labelled diagram of a three point starter with DC shunt motor.
- b) Explain the methods of speed control in a DC Motor.
- c) The armature of a 4 pole lap wound shunt generator has 128 slots and 4 conductors per slot. The flux per pole is 48mWb. Find at what speed the armature is to be rotated so as to generate 256 Volts.
- d) State any 4 parts of a DC Generator.
- e) State and explain Lenz's law with diagrams.

Q.4 Attempt any three**9**

- a) Define:
i. Resistance
ii. Cycle
iii. Amplitude
- b) State Flemings Right hand rule with diagram,
- c) Explain DC Shunt Generator with Diagram.
- d) A coil having resistance of 50Ω and an inductance of 35 mH is connected across 210V, 50Hz ac supply. Calculate inductive reactance, impedance, current and power factor.

Q.5 Attempt any three**9**

- a) Explain the function of NVC and OLC.
 - b) Define:
 - i. Magnetic circuit
 - ii. Magnetic flux
 - iii. Magnetic poles
 - c) What are the different types of motors? Also state their applications
 - d) Define:
 - i. DC Motor
 - ii. Inductive Reactance
 - iii. Back emf
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