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**3rd Sem / Branch : 3 Eltx, EI, IC, Medical  
Eltx, Power Eltx, Elect. & Eltx. Engg  
Subject:- Electrical M/C**

Time : 3Hrs. M.M. : 100

## **SECTION-A**

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

- Q.1 A good servo motor should provide high torque at all  
a) Loads b) Frequencies  
c) Speeds d) Voltages

Q.2 A PM stepper motor has 8 poles on stator and 4 poles on the rotor. Step angle will be  
a)  $15^\circ$  b)  $30^\circ$   
c)  $45^\circ$  d)  $60^\circ$

Q.3 Material used for salient poles of a VR stepper motor is  
a) Para magnetic b) Diamagnetic  
c) Ferromagnetic d) Non-magnetic

Q.4 In a 3 phase star connected system  
a)  $VL=VP$  b)  $VL=\sqrt{3} VP$   
c)  $IL=3 IP$  d)  $IL=IP/3$

Q.5 Various phase of a 3 phase system have a phase difference of

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- a)  $60^\circ$       b)  $90^\circ$   
c)  $120^\circ$       d)  $180^\circ$

Q.6 An ideal transformer is considered to have  
a) Zero resistance of primary & secondary winding  
b) Zero iron loss  
c) No leakage of magnetic flux  
d) All of the above

Q.7 Armature of a dc machine is laminated  
a) To improve heat dissipation in armature  
b) To reduce copper losses  
c) To reduce iron losses  
d) To increase flux density

Q.8 Starter is used in a dc motor  
a) To increase the starting torque  
b) To increase back EMF  
c) To reduce the speed of motor  
d) To reduce the starting current

Q.9 Power drawn by a transformer on no load is required to meet mainly  
a) Copper losses      b) Iron losses  
c) Rotational losses      d) Load losses

Q.10 Core of transformer is generally made of  
a) Mild stone      b) Silicon steel

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- c) Non-magnetic      d) Material Cast iron

### SECTION-B

**Note:** Objective type questions. All questions are compulsory.  $(10 \times 1 = 10)$

Q.11 What is the full form of PT?

Q.12 Define torque angle.

Q.13 What is the basic principle of transformer?

Q.14 What is the basic principle of transformer?

Q.15 What is back E.M.F. in D.C. motor?

Q.16 Define generator.

Q.17 Define flux.

Q.18 Which winding are used in servo motor.

Q.19 Define DC motor.

Q.20 What are polyphaser system?

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions.  $(12 \times 5 = 60)$

Q.21 Name different winding connections of a three phase transformer.

Q.22 How power can be measured in a 3 phase system by 2 wattmeter method?

Q.23 State the working principle of a transformer.

Q.24 State the difference between motor and generator.

Q.25 Write about the double field revolving theory.

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Q.26 How torque is developed due to alignment of two fields?

Q.27 What are the advantages of three phase motor over single phase motor?

Q.28 Explain the function of commutator in DC machine.

Q.29 Write the application of DC machine.

Q.30 What is the importance of voltage regulation of a transformer?

Q.31 Write about the main parts of a transformer.

Q.32 What are different types of excitation of DC machines?

Q.33 Write about the application of synchronous machine.

Q.34 Why stator of an induction motor is laminated?

Q.35 Write the advantages & disadvantages of servo motor.

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions.  $(2 \times 10 = 20)$

Q.36 Explain the principle and working of synchronous motor.

Q.37 Explain the construction and working of single phase induction motor.

Q.38 Explain various parts of DC motor.

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