Enrollment No.....

Faculty of Engineering

End Sem (Even) Examination May-2018

EE2CO07 Electrical Engineering Drawing

Programme: Diploma Branch/Specialisation: EE

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. One MΩ equals **1**
(a) 100 Ω (b) 1000 Ω (c) 0.00001 Ω (d) 1000000 Ω

ii. In 3-ph-4 wire system four wires represent **1**
(a) 3 Neutral 1 Ground (b) 3 Ground 1 Neutral
(c) 1 Phase 3 Neutral (d) 3 Phase 1 Neutral

iii. Which of the following lamp gives highest lumens per watt **1**
(a) Mercury Vapor Lamp (b) Sodium Vapor Lamp
(c) Fluorescent Tube (d) Neon Lamp

iv. A 60 W Lamp given a Luminous Flux of 1500 Lumen its η(efficiency) in lumen/watt is **1**
(a) 60 lumen/watt (b) 1500 lumen/watt
(c) 25 lumen/watt (d) 9000 lumen/watt

v. 3 point starter is used to start **1**
(a) Series Motor (b) Shunt Motor
(c) Compound Motor (d) Both (b) and (c)

vi. D.O.L. stands for **1**
(a) Direct Open Line Starter (b) Distinct On Line Starter
(c) Direct On Line Starter (d) Diversified On Line starter

vii. The correct sequence for reversing the Speed of Rotation in 3-ph motor is **1**
(a) RYB (b) RBY (c) YBR (d) BRY

viii. In simplex Wave winding A is equal to **1**
(a) Two (b) Four
(c) Number of poles (d) None of these

ix. Wooden poles can be used for a distance of maximum upto **1**
(a) 100 m (b) 160 m (c) 300 m (d) 200 m

P.T.O.

x. The highest transmission voltage in India is **1**
(a) 765 kV (b) 400 kV (c) 220 kV (d) 132 kV

Q.2 i. Enlist various multiples and Submultiples used in Electrical Drawing. **4**

ii. Explain the working principle of a ceiling fan. Does it bring down the temperature? Give logical reasoning. **6**

OR iii. Define lightning arrestor. Also mention characteristics of an ideal lightning arrestor. **6**

Q.3 i. How intermediate switch can be used in go down/big hall explain with the help of diagram? **4**

ii. Draw fluorescent tube circuit and explain its working principle in details. **6**

OR iii. Write a short note on sodium vapour lamp. Mention its various applications. **6**

Q.4 i. Differentiate between slip ring and squirrel cage motors. **4**

ii. Write down construction, working and limitation of a three point motor starter for DC shunt motor. **6**

OR iii. What do you understand by Plate Earthing and Pipe Earthing? Explain in details with the help of a diagram. **6**

Q.5 i. Differentiate between simplex lap and wave windings. **4**

ii. Draw the winding Diagram in radial form for a 4 pole, 12 slot simplex lap connected DC generator with commutator having 12 segments. Indicate the position of brushes. **6**

OR iii. Draw the winding Diagram in radial form for a 4 pole, 13 slot simplex wave connected DC generator with commutator having 13 segments. The number of coil sides per slot is 2. Indicate the position of brushes. **6**

Q.6 i. Classify various types of Transmission Towers. **4**

ii. Draw complete Electrical layout of 33/11kV substation with all protective devices. **6**

OR iii. How various cross arms can be arranged? Explain with Diagram **6**

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EE2CO07 Electrical Engineering Drawing

Marking Scheme

Q.1	i.	1 MΩ equals (d) 1000000 Ω	**1**
	ii.	In 3-ph-4wire system four wires represent (d) 3 Phase 1 Neutral	**1**
	iii.	Which of the following lamp gives highest lumens per watt (b) Sodium Vapor Lamp	**1**
	iv.	A 60 W Lamp given a Luminous Flux of 1500 Lumen its η(efficiency) in lumen/watt is (c) 25 lumen/watt	**1**
	v.	3 point starter is used to start (d) Both (b) and (c)	**1**
	vi.	D.O.L. stands for (c) Direct On Line Starter	**1**
	vii.	The correct sequence for reversing the Speed of Rotation in 3-ph motor is (b) RBY	**1**
	viii.	In simplex Wave winding A is equal to (a) Two	**1**
	ix.	Wooden poles can be used for a distance of maximum upto (b) 160 m	1
	x.	The highest transmission voltage in India is (a) 765 kV	1
Q.1	i.	Enlist various multiples and Submultiples used in Electrical Drawing. **(multiples= 2 Marks, submultiples=2 Marks)**	**4**
	ii.	Explain the working principle of a ceiling fan? Does it bring down the temperature? Give logical reasoning. **(Principle =4 Marks, Reasoning=2 Marks)**	**6**
OR	iii.	Define lightning arrestor? Also mention characteristics of an ideal lightning arrestor. **(Definition=2 Marks, characteristics=4 Marks)**	**6**
Q.2	i.	How intermediate switch can be used in go down/big hall explain with the help of diagram. **(Explanation=2 Marks, Diagram=2 Marks)**	**4**
	ii.	Draw fluorescent tube circuit and explain its working principle in details. **(Diagram=2 Marks, Principle= 4 Marks)**	**6**
OR	iii.	Write a short note on sodium vapour lamp. Mention its various applications. **(Note= 4 Marks, Applications=2 Marks)**	**6**
Q.3	i.	Differentiate between slip ring and squirrel cage motors. **(Four points= 4*1 Marks)**	**4**
	ii.	Write down construction, working and limitation of a three point motor starter for DC shunt motor. **(Diagram = 2 Marks, Theory = 4 Marks)**	**6**
OR	iii.	What do you understand by Plate Earthing and Pipe Earthing? Explain in details with the help of a diagram. **(Diagram =2*1.5 Marks, Explanation = 3 Marks)**	**6**
Q.4	i.	Differentiate between simplex lap and wave windings. **(Four points =4*1 Marks)**	**4**
	ii.	Draw the winding Diagram in radial form for a 4 pole, 12 slot simplex lap connected DC generator with commutator having 12 segments. Indicate the position of brushes. **(Given=1 Marks, Diagram = 5 Marks)**	**6**
OR	iii.	Draw the winding Diagram in radial form for a 4 pole, 13 slot simplex wave connected DC generator with commutator having 13 segments. The number of coil sides per slot is 2. Indicate the position of brushes. **(Given=1 Marks, Diagram = 5 Marks)**	**6**
Q.5	i.	Classify various types of Transmission Towers. **(Any four = 4*1 Marks)**	**4**
	ii.	Draw complete Electrical layout of 33/11kV substation with all protective devices. **(Component Names =1 Marks, Layout = 5 Marks)**	**6**
OR	iii.	How various cross arms can be arranged? Explain with Diagram **(Cross Arm Names =3 Marks, Diagram = 3 Marks)**	**6**

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