Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem (Even) Examination May-2019

EE2CO16 Electrical Estimation and Energy Auditing

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. Fuse wire should possess **1**

(a) High specific resistance and high melting point
(b) High specific resistance and low melting point
(c) Low specific resistance and low melting point
(d) Low specific resistance and high melting point

ii. What is the maximum number of lighting points that can be connected in a circuit? **1**

(a) 5 (b) 10 (c) 8 (d) 12

iii. What should be the value of earthing resistance for large power stations? **1**

(a) 1 Ω (b) 0.5 Ω (c) 2 Ω (d) 5 Ω

iv. Earth wire or ground wire is made of: **1**

(a) Copper (b) Aluminum (c) Iron (d) Galvanized steel

v. Which capacitor is preferred for single phase motor? **1**

(a) Paper capacitor (b) Ceramic capacitor
(c) Electrolyte capacitor (d) None of these

vi. Two-way switches is used for **1**

(a) Stair case wiring (b) Conduit wiring
(c) CTS wiring (d) None of these

vii. An energy policy does not include **1**

(a) Target energy consumption reduction
(b) Time period for reduction
(c) Declaration of top management commitment
(d) Future production projection

P.T.O.

viii. The objective of energy management includes **1**
(a) Minimizing energy costs
(b) Minimizing waste
(c) Minimizing environmental degradation
(d) All of these

ix. CFL means **1**
(a) Combustible fluoride lamp
(b) Compact fluoride lamp
(c) Compact fluorescent lamp
(d) Combustible fluorescent lamp

x. The inside wall of fluorescent tube is coated with **1**
(a) Sulphur powder (b) Phosphor powder
(c) Sodium (d) Krypton

Q.2 i. Draw the following symbol **2**
(a) Two-way switch (b) Fan
(c) Open circuit (d) Electric bell

ii. Write the rules of electric wiring. **3**

iii. Define fuse. Write the factors which affect the selection of fuse. **5**

OR iv. Explain the different type of wiring with circuit diagram. **5**

Q.3 i. What is earthing? Why do we need earthing? **2**

ii. Write the difference between earth wire and neutral wire. **3**

iii. Explain the pipe earthing with neat and clean diagram. **5**

OR iv. Write short note on substation earthing. **5**

Q.4 Attempt any two:

i. Write the conditions and requirement of domestic installation. **5**

ii. Explain the wiring of irrigation pump motor. **5**

iii. Explain the street light service wiring having 12 light lamps. **5**

Q.5 Attempt any two:

i. What is energy audit? Write the role of energy audit manager. **5**

ii. What are the major steps involved in electrical energy audit? **5**

iii. Explain energy conservation policy and energy management. **5**

Q.6 Attempt any two:

i. Explain the working of fluorescent tube light with diagram. **5**

ii. With the help of circuit diagram explain the working of tube light. Explain the advantages of CFL over tube light. **5**

iii. What are the factors, which must be taken into consideration for design of the lighting scheme? **5**

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Marking Scheme

EE2CO16 Electrical Estimation and Energy Auditing

Q.1	i.	Fuse wire should posses (d) Low specific resistance and high melting point		**1**
	ii.	What is the maximum number of lighting points that can be connected in a circuit? (b) 10		**1**
	iii.	What should be the value of earthing resistance for large power stations? (b) 0.5 Ω		**1**
	iv.	Earth wire or ground wire is made of: (d) Galvanized steel		**1**
	v.	Which capacitor is preferred for single phase motor? (c) Electrolyte capacitor		**1**
	vi.	Two-way switches is used for (a) Stair case wiring		**1**
	vii.	An energy policy does not include (d) Future production projection		**1**
	viii.	The objective of energy management includes (d) All of these		**1**
	ix.	CFL means (c) Compact fluorescent lamp		**1**
	x.	The inside wall of fluorescent tube is coated with (b) Phosphor powder		**1**
Q.2	i.	Draw the symbol 0.5 mark for each	(0.5 mark * 4)	**2**
	ii.	Rules of electric wiring. Six rules 0.5 mark for each rule	 (0.5 mark * 6)	**3**
	iii.	Definition fuse Factors which affect the selection of fuse.	2 marks 3 marks	**5**
OR	iv.	Type of wiring Circuit diagram.	3 marks 2 marks	**5**
Q.3	i.	Earthing Need of earthing	1 mark 1 mark	**2**
	ii.	Difference between earth wire and neutral wire. 6 points 0.5 mark for each	 (0.5 mark * 6)	**3**
	iii.	Pipe earthing Diagram.	3 marks 2 marks	**5**
OR	iv.	Substation earthing. Doagram	3 marks 2 marks	**5**
Q.4		Attempt any two:		
	i.	Conditions of domestic installation Requirement of domestic installation.	2 marks 3 marks	**5**
	ii.	Wiring of irrigation pump motor. Diagram	3 marks 2 marks	**5**
	iii.	Street light service wiring having 12 light lamps. Diagram	3 marks 2 marks	**5**
Q.5		Attempt any two:		
	i.	Energy audit Role of energy audit manager.	2 marks 3 marks	**5**
	ii.	Major steps involved in electrical energy audit 1 mark for each step	 (1 mark * 5)	**5**
	iii.	Energy conservation policy Energy management.	2 marks 3 marks	**5**
Q.6		Attempt any two:		
	i.	Working of fluorescent tube light Diagram.	3 marks 2 marks	**5**
	ii.	Working of tube light with circuit diagram Advantages of CFL over tube light.	3 marks 2 marks	**5**
	iii.	Factors, which must be taken into consideration Design of the lighting scheme	3 marks 2 marks	**5**

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