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

Enrollment No.....

Faculty of Engineering

End Sem (Even) Examination May-2018

EE2CO08 Generation, Transmission & Distribution

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. Which is non- conventional source of energy? **1**

(a) Fossile fuels
(b) Radio-active substances
(c) Geothermal, ocean & waves
(d) Water

ii. Tidal energy utilizes. **1**

(a) Kinetic energy of water (b) Potential energy of water
(c) Both (a) and (b) (d) None of these

iii. Condenser of in a steam power plant condense steam coming out of **1**

(a) Turbine (b) Boiler (c) Economiser (d) Superheater

iv. In thermal power plant, turbine is placed **1**

(a) Before boiler (b) In between boiler and generator
(c) After generator (d) Any of the above

v. Load factor is defined as the ratio of **1**

(a) Average load to maximum load
(b) Maximum load to connected load
(c) Maximum load to average load
(d) Average load to installed capacity

vi. The capacity factor of plant is ratio of **1**

(a) Maximum load to average load
(b) Average load to maximum load
(c) Average load to plant capacity
(d) None of these

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vii. On which factor is the corona loss dependent on? **1**
(a) Material of the conductor (b) Diameter of the conductor
(c) Height of the conductor (d) None of these

viii. In which of the transmission systems is the skin effect observed? **1**
(a) Cable carrying dc current (b) DC transmission line only
(c) AC transmission line only (d) DC as well as AC transmission lines

ix. What are the line constants in a transmission line? **1**
(a) Resistance and series conductance only
(b) Series and shunt conductance.
(c) Resistance, inductance and capacitance
(d) Resistance, inductance, capacitance and shunt conductance.

x. When does the Ferranti effect happen on the transmission line? **1**
(a) When the line is short and loaded
(b) When the line is long and loaded
(c) When the line is long and unloaded
(d) None of these.

Q.2	i.	Write the difference between conventional and non-conventional sources of energy.	**2**
	ii.	What is solar cell? Explain its principle of operation.	**3**
	iii.	Draw the schematic diagram of an MHD power generating system having heat recovery system genarator. Explain the function of the system	**5**
OR	iv.	What is solar energy? How solar energy may be utilized in generation of electrical power? Explain with the help of a neat sketch.	**5**
Q.3	i.	Write the name of some auxiliaries in thermal power station.	**2**
	ii.	Write various factor which affect the location of site of a hydro-power station.	**3**
	iii.	Give advantages and disadvantages of thermal, hydro and nuclear power plant.	**5**
OR	iv.	Draw the general layout of a modern thermal power plant.	**5**
Q.4	i.	Define base load and peak load.	**2**

	ii.	Explain the load duration curve.	**3**
	iii.	Write the types of Tariff and also give their merits and demerits.	**5**
OR	iv.	Define the maximum demand, Load factor, Utility factor, Capacity factor and Demand factor.	**5**
Q.5	i.	Draw the Single line diagram of complete power system.	**2**
	ii.	What is H.V.D.C. transmission system. write advantages and Disadvantages of H.V.D.C system	**3**
	iii.	Write cause & effects of sag on transmission line, effect of wind, ice and temperature on sag	**5**
OR	iv	Define corona in transmission line. Write advantages and disadvantages of corona & methods of reducing corona,	**5**
Q.6	i	Define Ferranti effect in power system.	**2**
	ii	Write difference between overhead line and underground cables.	**3**
	iii	Classified the distribution system. Give the advantages and disadvantages of ring main & radial distribution system.	**5**
OR	iv	Represent the Π network of medium Transmission line with expression.	**5**

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Marking Scheme
EE2CO08 Generation, Transmission & Distribution

Q.1	i.	Which is non- conventional source of energy? (c) Geothermal, ocean & waves		**1**
	ii.	Tidal energy utilizes. (b) Potential energy of water		**1**
	iii.	Condenser of in a steam power plant condense steam coming out of (a) Turbine		**1**
	iv.	In thermal power plant, turbine is placed (b) In between boiler and generator		**1**
	v.	Load factor is defined as the ratio of (a) Average load to maximum load		**1**
	vi.	The capacity factor of plant is ratio of (c) Average load to plant capacity		**1**
	vii.	On which factor is the corona loss dependent on? (b) Diameter of the conductor		**1**
	viii.	In which of the transmission systems is the skin effect observed? (c) AC transmission line only		**1**
	ix.	What are the line constants in a transmission line? (d) Resistance, inductance, capacitance and shunt conductance.		**1**
	x.	When does the Ferranti effect happen on the transmission line? (c) When the line is long and unloaded		**1**
Q.2	i.	0.5 marks of each four difference	(0.5 mark * 4)	**2**
	ii.	Defeniation Principle of operation	1 mark 2 marks	**3**
	iii.	Diagram Function	3 marks 2 marks	**5**
OR	iv.	Definition solar energy Diagram Explanation	1 mark 2 marks 2 marks	**5**
Q.3	i.	Each four auxiliary 0.5 mark	(0.5 mark * 4)	**2**
	ii.	Each six factor 0.5 mark	(0.5 mark * 6)	**3**
	iii.	Advantages and disadvantages of Thermal Hydro Nuclear power plant	 2 marks 1.5 marks 1.5 marks	**5**
OR	iv.	Complete correct layout		**5**
Q.4	i.	Each definition 1 mark	(1 mark * 2)	**2**
	ii.	Load duration curve Explanation	1.5 marks 1.5 marks	**3**
	iii.	Definition Merits and demerits	1 mark 4 marks	**5**
OR	iv.	Definition of each 1 mark	(1 mark * 5)	**5**
Q.5	i.	Single line diagram Proper nomenclature	1 mark 1 mark	**2**
	ii.	Definition Advantages and Disadvantages	1 mark 2 marks	**3**
	iii.	Any four Cause Effects on given part	2 marks 3 marks	**5**
OR	iv	Definition Advantages and disadvantages	2 marks 3 marks	**5**
Q.6	i	Definition		**2**
	ii	Any four difference		**3**
	iii	Classification Advantages and disadvantages	2 marks 3 marks	**5**
OR	iv	Model representation Expression	3 marks 2 marks	**5**

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