



Sanjay Ghodawat University, Kolhapur

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2018-19

EXM/P/09/01

Year and Program: 2018-19

School of Technology

Department of Electrical Engineering

Course Code: EET 209

Course Title: Generation &  
Transmission of Electrical power

Semester – III

Day and Date: Thursday,  
6-12-18

End Semester Examination  
(ESE)

Time: 2.30pm-5.30pm  
Max Marks: 100

**Instructions:**

- 1) All questions are compulsory.
- 2) Assume suitable data wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1	Solve the following.	Marks	Bloom's Level	CO
a)	Explain the different classification of costs of electrical energy.	07	L <sub>2</sub>	CO4
	OR			
a)	Explain the disadvantages of low power factor.	07	L <sub>3</sub>	CO4
b)	Derive the appropriate equation for sag in overhead lines when supports are at unequal levels.	08	L <sub>3</sub>	CO5
	OR			
b)	Draw and explain in detail suspension type insulators with its advantages.	08	L <sub>2</sub>	CO5
Q.2	Solve the following.			
a)	Derive an expression for loop inductance of a single phase line.	07	L <sub>3</sub>	CO6
	OR			
a)	Derive an expression for inductance per phase for a three phase overhead transmission line when conductors are unsymmetrically placed but line is completely transposed.	07	L <sub>3</sub>	CO6
b)	Compare Base load hydraulic plant with Peak load hydraulic plant.	08	L <sub>3</sub>	CO1
	OR			
b)	Explain with suitable diagram working of Pelton wheel turbine.	08	L <sub>3</sub>	CO1
Q.3	Solve any Two			
a)	Explain Flat rate tariff and two part tariff with their advantages and disadvantages.	08	L <sub>2</sub>	CO4
b)	Why are insulators used in overhead lines? Discuss the desirable properties of insulators.	08	L <sub>2</sub>	CO5

	c)	Find the inductance per km of a 3 $\phi$ transmission line using 1.24 cm diameter conductors when these are placed at the corners of an equilateral triangle of each side 2m.	08	L <sub>3</sub>	CO6
	d)	Write the advantages and disadvantages of hydraulic power plant.	08	L <sub>3</sub>	CO1
<b>Q.4</b>		<b>Solve any Two</b>			
	a)	Draw the schematic arrangement of thermal power plant and explain coal storage and coal handling plant in detail with its block diagram.	09	L <sub>3</sub>	CO2
	b)	Compare fire tube boiler with water tube boiler.	09	L <sub>3</sub>	CO2
	c)	Explain the hand firing and stoker firing methods of coal combustion in detail. Also classify stoker firing method in detail.	09	L <sub>1</sub>	CO2
<b>Q.5</b>		<b>Solve any Two</b>			
	a)	Explain the different factors governing selection of site for nuclear power plant.	09	L <sub>3</sub>	CO3
	b)	Compare nuclear fission process with nuclear fusion process	09	L <sub>3</sub>	CO3
	c)	Explain in brief function of each part of nuclear reactor with its diagram.	09	L <sub>3</sub>	CO3
<b>Q.6</b>		<b>Solve any Three</b>			
	a)	Draw and explain the working of following parts related to thermal power plant. i) Superheater ii) Economizer	06	L <sub>2</sub>	CO2
	b)	Explain in detail draught system used in thermal power plant.	06	L <sub>2</sub>	CO2
	c)	Explain in detail classification of nuclear waste management.	06	L <sub>1</sub>	CO3
	d)	Explain advantages and disadvantages of nuclear power plant.	06	L <sub>3</sub>	CO3

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