Total No. of Questions : 4]

SEAT No. :

PA-4964

[Total No. of Pages : 2

[6008]-212

S.E. (Electrical) (Insem)

POWER SYSTEMS - I

(2019 Pattern) (Semester - II) (203145)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Answer Q1 or Q2, Q3 or Q4.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume Suitable data if necessary.***

Q1) a) Define tariff hence state different objectives of tariff. **[5]**

b) Explain what is interconnected grid system hence state its advantages. **[5]**

c) A Daily load on a generating station is as follows. **[5]**

Time (Hrs)	0-5	5-10	10-13	13-18	18-20	20-24
Load (MW)	25	30	40	35	50	25

Draw the load curve and calculate load factor

OR

Q2) a) The maximum demand of a consumer in a year is 400 kW at 0.8 load factor, If the tariff is Rs. 150/ kW of MD + 20 paisa/kWh. Find overall cost/kWh **[4]**

b) Write a note on Availability Based tariff. **[5]**

c) Define the following terms and state their use : **[6]**

i) Load Factor

ii) Demand Factor

iii) Plant Capacity Factor

P.T.O.

Q3) a) Explain in brief working of following equipment's in power station hence state their use in the system. **[6]**

i) Alternators

ii) Protective relays

b) With neat diagram, explain working of AC excitation system used in alternator. **[4]**

c) A 110 kV, 50 Hz. 5 km long underground cable has conductor diameter of 2.5 cm and diameter of lead sheath is 4 cm. Calculate capacitance of cable per phase. Assume $\varepsilon_r = 4.6$. **[5]**

OR

Q4) a) Explain what is necessity of grading of cables hence explain capacitance grading. **[6]**

b) Derive the expression for maximum and minimum dielectric stress in single core cable. **[4]**

c) Explain use of power transformer hence list different specifications written by manufacturer on nameplate of power transformer. **[5]**

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