C. U. SHAH UNIVERSITY Winter Examination-2022

Subject Name : Electrical Power System

Subject Code : 4TE05EPS1			Branch: B.Tech (Electrical)			
Semester	r: 5	Date: 24/11/2022	Time: 02:30 To 05:30	Marks: 70		
 Instructions: (1) Use of Programmable calculator & any other electronic instrument is prohibited. (2) Instructions written on main answer book are strictly to be obeyed. (3) Draw neat diagrams and figures (if necessary) at right places. (4) Assume suitable data if needed. 						
Q-1		Attempt the following question	ns:	(14)		
	a)	What is connected load? (a)Installed electrical load in the (b) Maximum load a consumer	draws.			
	b)	(c) Load drawn by a consumer a(d) None of the aboveUtilisation factor is defined as t(a) Average demand to the rated	he ratio of			
		(b) Maximum demand on the power plant.(c) Rated capacity of the power	ower plant to the rated capacity of plant to the maximum demand.	the		
	c)	(d) None of theseThe diesel plants are mainly use(a) as peak load plants .(b) as bas(c) as standby power plants.(d)	se load plants.			
	d)	What is the shape of the load du (a) Rectangular shape (b) Trian (c) Parabolic shape (d) Free har	uration curve? gular shape			
	e)	In transmission lines the cross-a				
	f)	(i) Copper (ii) wood (iii) R.C.CWhat is the load factor of a pow(a) Greater than unity (b) Less(c) Always more than unity (d)	ver plant? than unity			
	g)	Pin type insulators are generally (a) 1 kv (b) 11 kv (c) 22 kv (d)	-			
	h)		supply to residential consumers is			
	i)	Aluminum has a specific gravit				
	j)	(a) 1.5 (b) 2.7 (c)4.2 (d)7.8 Distribution lines in India gener (a) wooden poles (b) R.C.C. po	rally use bles ° (c) steel towers (d) none of th	heabove		



- k) The current drawn by the line due to corona losses is(a) Non Sinusoidal (b) Sinusoidal (c)Triangular (d)Square
- I) The usual spans with R.C.C. poles are

 (a) 40—50 meters
 (b) 60—100 meters
 (c) 80—100 meters
 (d) 300—500 meters
- m) The wooden poles well impregnated with creosite oil or any preservative compound have life
 (a)from 2 to 5 years
 (b) 10 to 15 years
 (c)25 to 30 years
 (d)60 to 70 years
- m) What is the power factor tariff?
 (a)It considers only maximum demand.
 (b) It considers only semi fixed charges and the power factor.
 (c) It considers only power factor.
 (d) It considers the load factor

Attempt any four questions from Q-2 to Q-8

Q-2	A B	Attempt all questions Compare the Thermal, Hydro and Nuclear power plant. What is Corona? Explain its advantages and disadvantages. Also state factors affecting it.	(14) 07 07
Q-3		Attempt all questions	(14)
	Α	What are the factors to be considered for the selection of a nuclear power station.	07
	В	Explain briefly different types of insulators used in power system.	07
Q-4		Attempt all questions	(14)
	Α	Explain schematic arrangement of Hydro power plant.	07
	В	Define short, medium and long transmission line on the basis of its length and voltage. Explain Nominal T method in respect to medium transmission line.	07
Q-5		Attempt all questions	(14)
	Α	State the classification of cables (according to voltage) and discuss their general construction.	07
	В	What are the factors to be considered for selection of the site for a thermal power station?	07
Q-6		Attempt all questions	(14)
	Α	Write a note on : Ferranti effect	07
	В	Show how the sag of an overhead line can be calculated in case of supports at different levels.	07
Q-7		Attempt all questions	(14)
	Α	Explain the term of Tariff ? Explain in detail about Two part Tariff & Block rate tariff.	07
	В	Explain (1) Load factor (2) Demand factor (3) Diversity factor (4) Load duration curve (5)Plant capacity factor (6)Average demand (7)Utilisation factor	07



Q-8	Attempt all questions	(14)
Α	Explain schematic arrangement of Thermal power plant.	07
В	Explain advantages and disadvantages of diesel power plant.	07

