B.E Degree Examination, September 2020

Semester VIII

EE16019 / Electrical Generation and Utilization

(Regulation 2016)

Time: Three hours Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

		CO	RBT
1.	What are the classifications based on plant capacity hydro plants?	1	U
2.	What kind of rotor is most suitable for turbo-alternators which are designed to run at high speed?	1	AP

A. Salient pole type B. Non-salient pole type

C. Inversely proportional to its upper 3dB frequency D. None of the above.

3.	What are the major components of nuclear power generation?	2	R
4.	In a fuel cell, electrical energy is produced by	2	AP

A. Reaction of hydrogen with oxygen B. Thermionic action

C. Combustion of fuel in the absence of oxygen D. None of the above.

5.	What are the advantages of solar concentrator?	3	R
6.	Which type of Generator is employed in wind power plant:	3	AP

a) Synchronous generator b) Induction generator

c) Permanent magnet motor d) Brushless motor

7.	List different lighting scheme	4	R
8.	Direct arc furnaces have which of the following power factors?	4	AP

A. Unity B. Low, lagging C. Low, leading D. Any of the above

PART B - (4 X16 = 64 marks)

9	(a)		With diagram explain detail about the principle and working of Hydro Electric Power plant	**(16 Marks)**	1	U
			(OR)			
	(b)		Explain about selection of site and also describe the characteristics of turbo alternator for thermal power plant.	**(16 Marks)**	1	U
10.	(a)		Explain with neat Layout - Nuclear reactor, working, classification, control, and waste disposal.	**(16 Marks)**	2	U
			(OR)			
	(b)	(i)	Enumerate the Need for renewable energy.	**(6Marks)**	2	U
		(ii)	Explain the methods of improving the power factor.	**(10 Marks)**		

11.	(a)	(i)	Explain the construction and working principle of Solar cell and solar power plant.	**(10 Marks)**	**3**	**AP**
		(ii)	Describe the working of solar water heater with neat diagram.	**(6 Marks)**		
			(OR)			
	(b)	(i)	Explain the working principle of wind energy conversion system.	**(10 Marks)**	**3**	**AP**
		(ii)	Write short notes on stand-alone and grid connected systems	**(6 Marks)**		
12.	(a)		Explain in detail about the Mercury arc lamp principle and working.	**(16Marks)**	**4**	**AP**
			(OR)			
	(b)		Explain the process of electrolysis used for electro plating with a suitable example.	**(10+6 Marks)**	**4**	**AP**