Registration no: | | | | | | | | | | |

Total Number of Pages:	**B.Tech**
	SUB_CODE**: FEEE6401**

8th Semester Regular / Back Examination 2015-16

SUBJECT NAME**: POWER STATION ENGINEERING AND ECONOMY**

BRANCH**: EEE, ELECTRICAL**

Time**: 3 Hours**

Max Marks**: 70**

Q.CODE**: W258**

Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

Q1		Answer the following questions:	**(2 x 10)**
	a)	Mention various types of loads which can be connected to a power system.	**2**
	b)	Differentiate between load curve and load duration curve.	**2**
	c)	Mention the effect of load factor on cost per kWh.	**2**
	d)	Define mass defect and binding energy in relation to a nuclear reaction.	**2**
	e)	Differentiate between nuclear fission and fusion.	**2**
	f)	Mention various ways of classifying hydro power plants.	**2**
	g)	What does a draft tube do in a hydro power plant ?	**2**
	h)	Find out the specific speed of a turbine of 10 MW capacity working under a head of 500m and having the normal working speed of 300 RPM.	**2**
	i)	Define and differentiate draught system of a thermal power plant.	**2**
	j)	What is an Electrostatic Precipitator?	**2**
Q2	**a)**	The equipment in a power station costs Rs 15,60,000 and has a salvage value of Rs 60,000 at the end of 25 years. Determine the depreciated value of the equipment at the end of 20 years on the following methods : (i) Straight line method ; (ii) Diminishing value method	**(5)**
	b)	A generating station has a maximum demand of 50,000 kW. Calculate the cost per unit generated from the following data : Capital cost = Rs 95 × 106 ; Annual load factor = 40% Annual cost of fuel and oil = Rs 9 × 106 ; Taxes, wages and salaries etc. = Rs 7·5 × 106 Interest and depreciation = 12%	**(5)**
Q3	**a)**	With a neat sketch explain the working of a nuclear power plant.	**(5)**

	b)	Give a comparison between pressurized water reactor and boiling water reactor.	**(5)**
Q4		Discuss various factors for site selection, merits and demerits of nuclear power plants.	**(10)**
Q5	**a)**	With a neat sktetch explain the working of a Hydro power plant.	**(5)**
	b)	Briefly explain various types of hydraulic turbines.	**(5)**
Q6	**a)**	Discuss in details various factors for site selection of a thermal power plant.	**(5)**
	b)	With a neat layout explain the working of a thermal power plant.	**(5)**
Q7	**a)**	Explain the working of Superheaters and reheaters in TPPs.	**(5)**
	b)	Explain the working of Economisers and air pre-heaters in TPPs	**(5)**
Q8		Write short notes on any two:	**(5 x 2)**
	a)	Steam Turbines	
	b)	Condensers	
	c)	Cooling Towers and Spray Ponds	
	d)	Electrostatic Precipitators	