C.U.SHAH UNIVERSITY
Summer Examination-2018

Subject Name: Power plant Engineering

Subject Code: 4TE05PPE1   **Branch: B.Tech (Mechanical)**

Semester: 5   **Date: 27/03/2018**   **Time: 10:30 To 01:30**   **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 questions:**   **(14)**

a)	How much percentage of electricity is generated by coal in India?	1
b)	Write any two unique features of high pressure boiler.	1
c)	What is the steam generation capacity of Loffler boiler?	1
d)	Spreader stoker is used for_____.	1
e)	What is the function of ESP?	1
f)	Draw the figure of gravitational separator.	1
g)	Classify draught system	1
h)	Write the equation for diameter of chimney.	1
i)	What is the drawback of Induced draught?	1
j)	In which type of condenser stem and cooling water come in direct contact?	1
k)	Deration is known as _____ process.	1
l)	Classify nuclear reactor based on core used.	1
m)	Defined demand factor	1
n)	What is the height of water head in low head hydro power plants	1

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

Q-2   **Attempt all questions**   **(14)**
  a) With neat sketch explain the process influencing Acid Rains.   **7**
  b) With neat sketch briefly explain various essential elements of Hydroelectric power Plant.   **7**

Q-3   **Attempt all questions**   **(14)**
  a) With neat sketch explain all four circuits of TPP.   **7**
  b) With neat sketch explain in detail working of Benson boiler.   **7**

Q-4   **Attempt all questions**   **(14)**
  a) With neat sketch explain coal preparation plant.   **5**
  b) Calculate the mass of flue gasses flowing through the chimney when the draught Produced is 1.9 cm of water. Temperature of flue gases is 290c and ambient temp. is 20c. The flue gasses formed per kg of fuel burnt are 23kg. Neglect the losses and take the diameter of chimney as 1.8m   **5**
  c) With neat sketch explain at Cyclone Separator   **4**

Q-5		**Attempt all questions**	**(14)**
	a)	Derive equation for height of chimney.	**7**
	b)	With neat sketch explain working of multi retort stoker and also write its advantages & disadvantages.	**7**

Q-6		**Attempt all questions**	**(14)**
	a)	With neat sketch explain working, advantages & disadvantages of evaporative condenser.	**7**
	b)	With neat sketch explain working, advantage & disadvantages of fast breeder reactor.	**7**

Q-7		**Attempt all questions**	**(14)**
	a)	With neat sketch explain detail working of economizer.	**7**
	b)	With neat sketch explain in detail about lime soda treatment.	**7**

Q-8		**Attempt all questions**	**(14)**
	a)	Explain about different type of tariffs for electrical energy.	**7**
	b)	With the help of neat sketch explain about any one lubrication system.	**7**