Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY
Winter Examination-2015

Subject Name: Power Plant Engineering

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

Semester: 5 **Date: 7/12/2015** **Time: 2:30 To 5:30** **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) List the components of modern TPP.
b) What is the minimum temperature of high pressure boiler?
c) Define load factor
d) List different Pulverized fuel burners.
e) Define plant capacity factor
f) Write the purposes of steam condenser.
g) List the impurities of feed water.
h) State the application of diesel power plant
i) Define Nuclear Fission
j) Define demand factor.
k) Write the definition of Draught.
l) Make a list of accessories of boiler
m) What is the function of draft tube?
n) Which Fluid is used as moderator?

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

Q-2 **Attempt all questions** **(14)**

A	Explain in detail about all the site selection criteria's for thermal power plant.	**5**
B	With neat sketch explain Loffler boiler.	**5**
C	Write working and construction of Economizer with neat sketch.	**4**

Q-3		**Attempt all questions**	**(14)**
	A	Explain in detail about all the four circuit of TPP with neat sketch.	**7**
	B	With diagram explain benson boiler and also write advantages & disadvantages.	**7**
Q-4		**Attempt all questions**	**(14)**
	A	With neat sketch explain principle of operation of Underfeed feeder.	**4**
	B	With neat sketch, advantages & disadvantages explain about Electrostatic precipitators	**5**
	C	With neat sketch explain about Deaeration feed water treatment.	**5**
Q-5		**Attempt all questions**	**(14)**
	A	With neat sketch explain about pneumatic or vacuum ash handling system.	**4**
	B	With neat sketch explain working of traveling grate stoker and also write advantages & disadvantages.	**5**
	C	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**
Q-6		**Attempt all questions**	**(14)**
	A	Derive the equation of Chimney height & diameter.	**7**
	B	Describe with the help of neat sketch the construction working of a CANDU reactor. What are its advantages & disadvantages?	**7**
Q-7		**Attempt all questions**	**(14)**
	A	With the help of neat sketch explain about any one lubrication system.	**4**
	B	Discuss different troubles caused by the impurities in water.	**5**
	C	Describe with the help of neat sketch the construction working of a PWR. What are its advantages & disadvantages?	**5**
Q-8		**Attempt all questions**	**(14)**
	A	Name Important gases pollution discharged by thermal power plants .How are they controlled?	**7**
	B	With neat sketch briefly explain about essential elements of Hydroelectric power plant.	**7**