

Enrollment No: _____

Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2017

Subject Name : Power Plant Instrumentation

Subject Code : 4TE08PPI1

Branch: B.Tech (IC)

Semester : 8

Date : 18/04/2017

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.
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Q-1 Attempt the following questions:

(14)

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| a) | What is the difference between forced draft and induced draft fans? | 01 |
| b) | What is the use of regenerator? | 01 |
| c) | Mention the importance of instrumentation in power plant. | 01 |
| d) | What is a function of economizer? | 01 |
| e) | Write the principle of ionization chamber or ionization smoke detectors. | 01 |
| f) | What is cogeneration? | 01 |
| g) | What do you mean by swelling effect of boiler drum level? | 01 |
| h) | Name any two instruments used to find CO in flue gas? | 01 |
| i) | List the different methods to measure the speed of turbine. | 01 |
| j) | What is the principle of radiation detector? | 01 |
| k) | How can we control the speed of turbine? | 01 |
| l) | What is a function of super heater? | 01 |
| m) | How to control the vibration of turbine blades? | 01 |
| n) | What is the principle of thermal conductivity analyzer? | 01 |

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



Q-2	Attempt all questions	(14)
a)	Discuss various combustion control systems used in power plants.	05
b)	Explain the block diagram and working of thermal power plant.	05
c)	Explain briefly dissolved oxygen analyzer.	04
Q-3	Attempt all questions	(14)
a)	Explain speed and vibration monitoring and control in power plant.	05
b)	Explain the block diagram and working of hydro power plant.	05
c)	Explain briefly flue gas oxygen analyzer.	04
Q-4	Attempt all questions	(14)
a)	Describe three element feed water control system.	05
b)	Explain the function of smoke density measurement and dust monitor.	05
c)	Explain briefly how power is measured in power plant.	04
Q-5	Attempt all questions	(14)
a)	Describe distributed control system in power plant.	07
b)	Explain the block diagram and working of nuclear power plant.	07
Q-6	Attempt all questions	(14)
a)	Describe in detail about interlocks in boiler.	07
b)	Explain the various measurement methods of nitrogen oxides.	07
Q-7	Attempt all questions	(14)
a)	Explain the block diagram and working of solar power plant with suitable diagram.	07
b)	Explain the various methods about measurement of Oxidants (Ozone)?	07
Q-8	Attempt all questions	(14)
a)	Explain single element and two element drum level control of a boiler.	07
b)	What are the factors to be considered while selecting the type of power plant.	07

