



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

## MECHANICAL ENGINEERING

### ASSIGNMENT QUESTIONS

<b>Course Name</b>	:	<b>POWER PLANT ENGINEERING</b>
<b>Course Code</b>	:	<b>A70353</b>
<b>Class</b>	:	IV B. Tech I Semester- JNTUH, R-15
<b>Branch</b>	:	Mechanical Engineering.
<b>Year</b>	:	2018 – 2019
<b>Course Coordinator</b>	:	Mr. G.Sarat Raju, Assistant Professor, Department of Mechanical Engineering.
<b>Course Faculty</b>	:	Mr. G.Sarat Raju, Assistant Professor, Department of Mechanical Engineering. Mrs. G.Karunya, Assistant Professor, Department of Mechanical Engineering.

#### Course Objective:

The Present course concentrates on developing basic understanding about various requirements that are involved in establishment of power plants. This course enables the student to explore requirements for the establishment of various types of power plants, their economic analysis and pollution effects. The course focuses on all fundamentals in establishing various types of steam, internal combustion engine, hydro electric and nuclear power plants. Also, in this course; students will gain a broad understanding of the power plant economics and environmental considerations. Student can understand and get knowledge about key factors and features, advantages and disadvantages of various types of power plants.

S. No	Question	Blooms Taxonomy Level	Course Outcome
<b>ASSIGNMENT-I (UNIT-I, II &amp; III)</b>			
1	Write briefly on steam generators.	Understand	1
2	a) Enumerate and explain the steps involved in coal handling. b) Explain the general layout of ash handling and dust collection systems.	Remember	2
3	a) Explain the working of spreader stoker with neat sketch. b) What are the different types of cooling towers ? Explain with a neat sketch	Remember	3
4	Write briefly about belt conveyors and screw conveyors.	Remember	4
5	Draw and explain the layout of modern diesel power plant showing the following systems. (i) Fuel supply system (ii) Lubrication system	Understand	5
6	Discuss the advantages and disadvantages of a diesel engine. State the applications of a diesel power plant.	Remember	5
7	Write briefly about lubricating system in diesel power plant.	Understand	6
8	Write briefly about super charging Mention the advantages of a super charger.	Remember	7
9	With the help of a diagram, explain the essential features of a hydro power plant.	Understand	8
10	Name the various types of dams. Give the advantages and draw backs of earth dams.	Remember	8
<b>ASSIGNMENT – II (UNIT III, IV &amp; V)</b>			
1	State the advantages and disadvantages of HWAT and VWAT	Remember	9
2	Explain the working principle of hydroelectric and gas turbine station.	Remember	10
3	Discuss about boiling water reactor with neat diagram	Understand	11
4	Explain with neat diagram sodium-graphite reactor	Remember	12
5	Enumerate Fast breeder reactor with neat diagram	Understand	12
6	Explain with neat diagram homogeneous reactor	Remember	13
7	Discuss about the cost elements of a thermal power plant	Understand	14

S. No	Question	Blooms Taxonomy Level	Course Outcome
8	What do you understand by load factor and capacity factor? When are they numerically equal?	Remember	14
9	Define peak load, demand factor, load factor and plant use factor. b) Explain briefly various methods of pollution.	Understand	15
10	The peak load on a power plant is 60 MW. The loads having maximum demands of 30 MW, 20 MW, 10 MW and 14 MW are connected to the power plant. The capacity of the power plant is 80 MW and the annual load factor is 0.50. Estimate (a) the average load on the power plant, (b) the energy supplied per year, (c) the demand factor, (d) the diversity factor.	Remember	14

**Prepared By:**

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**HOD, MECHANICAL ENGINEERING**