ALPHA COLLEGE OF ENGG & TECH

ODD SEM 2018

ASSIGNMENT 1

SUB : PPE(2171910) 7TH ME

NO	QUESTION	YEAR	MARKS
1	Explain in detail classification of power plant.	D09	4
2	Explain the Rankine cycle and derive the efficiency equation for Rankine cycle.	D11,JN14	3
3	With neat sketch explain the general layout of thermal power plant	D09,D11, JN13,MAY11	7
4	Explain site selection of thermal power plant.	D10	5
5	Explain High pressure boiler -la-Mont and Benson.	D09, D10,JA13,15,JN14	4,6,7
6	Explain FBC system.	D11,D13,JN14	3,7
7	Explain Corrosion in boilers and its prevention.	D09,JN15,MAY12	5,7

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ASSIGNMENT 2

SUB : PPE(2171910) 7TH ME

NO	QUESTION	YEAR	MARKS
1	Enlist Types of nozzles.	D09	4
2	Define:critical pressure ratio and derive the condition for maximum discharge through Nozzle.	D11,JN14	3
3	Explain the classification of steam turbine.	D09,D11, JN13,MAY11	7
4	With neat sketch explain the impulse turbine	D10	5
5	With neat sketch explain the reaction turbine.	D09	4,6,7
6	What is compounding of steam turbine?	D11,D13,JN14,D11 ,D10,D9	7
7	With neat sketch explain the following. a. Pressure compounding b. Velocity compounding c. Pressure - Velocity compounding.	D09,JN15MAY15,J N14	5,7
8	Draw a velocity diagram of impulse turbine and derive the equation of blade efficiency, stage efficiency and nozzle efficiency.	D11,D13,JN14	7
9	Derive the condition for maximum efficiency of impulse turbine.	D09,JN15,MAY12	7
10	Derive the equation of Degree of reaction.	D11,D13,JN14	4,6,7
11	Explain the Parson's turbine and derive condition for maximum efficiency of Parson's reaction turbine.	D09,JN15,MAY12	7
12	With neat sketch explain the following methods of governing a. Throttle governing b. By-pass Governing c. Nozzle governing.	D11,D13,JN14	7

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ASSIGNMENT 3

SUB : PPE(2171910) 7TH ME

NO	QUESTION	YEAR	MARKS
1	Explain Types of stokers and their working.	D09	4
2	Explain Pulverized fuel handling systems.	D11,JN14	3
3	Explain -Pulverized mills- ball mill, Bowl mill.	D09,D11, JN13,MAY11	7
4	Explain -Pulverized coal burners, Oil burners.	D10	5
5	Explain-Necessity of ash disposal.	D09, D10	4
6	Explain -mechanical; hydraulic; pneumatic and steam jet ash handling system.	D11,D13,JN14	3,7
7	Explain the Functioning of Mechanical dust collector, Electrostatic precipitator.	D09,JN15,MAY12	5,7
8	Explain the Natural draught and estimation of height of chimney.	D11,D13,JN14	7
9	Explain: Forced; induced and balanced draugh	D09,JN15,MAY12	7
10	Explain: Power requirement by fans.	D11,D13,JN14	4,6,7

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ASSIGNMENT 4

SUB : PPE(2171910) 7TH ME

NO	QUESTION	YEAR	MARKS
1	Explain: Types of condensers.	D09	4
2	Explain the Effects of air leakage.	D11,JN14	3
3	Explain the Methods of obtaining maximum vacuum in condenser.	D09,D11, JN13,MAY11	7
4	Explain: Edward air pump.	D10	5
5	Explain: Necessity of cooling ponds and cooling towers.	D09, D10,JA13,,MAY12	4,6,7
6	Explain: Types of cooling towers and cooling ponds.	D11,D13,JN14	3,7
7	Explain: Necessity of feed water treatment.	D09,JN15,MAY12	5,7
8	Explain: Different impurities found in feed water and Effect of impurities.	D11,D13,JN14	7
9	Explain: Hot lime soda process and Zeolite ion exchange process.	D09,JN15,MAY12	7
10	Explain: Reverse osmosis process.	D11,D13,JN14	4,6,7
11	Explain: DE-aeration.	D09,JN15,MAY12	7

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ASSIGNMENT 5

SUB : PPE(2171910) 7TH ME

NO	QUESTION	YEAR	MARKS
1	Discuss the working of a gas turbine power plant with the help of a schematic diagram.	D09	4
2	Explain the working of open-cycle gas turbine with advantage and disadvantage.	D11,JN14	3
3	Explain the working of close-cycle gas turbine with advantage and disadvantage.	D09,D11, JN13,MAY11	7
4	Explain the Ideal Brayton cycle with P-V and T-S diagrams. Derive expressions for air standard efficiencies of Brayton cycles.	D10	5
5	Derive the equation for maximum work of Ideal Brayton cycle.	D09, D10,JA13,15,JN14 ,15, MR10,MAY11,MAY 12	4,6,7
6	Explain the Actual Brayton cycle with T-S diagrams. Derive expressions for air standard efficiencies for actual Brayton.	D11,D13,JN14	3,7
7	State the different methods of improving the thermal efficiency of a gas turbine and explain any one of them in detail.	D09,JN15,MAY12	5,7
8	Which are the different methods to improve the performance of Gas Turbine? Explain each with effects on Gas Turbine performance.	D11,D13,JN14	7
9	Explain the advantage and disadvantage of gas turbine over steam turbine.	D09,JN15,MAY12	7
10	State the applications of gas turbine with its merits and demerits.	D11,D13,JN14	4,6,7
11	In constant pressure open cycle gas turbine air enters the compressor at 1 bar and 18^0C where it is compressed to a pressure ratio of 6. The gases enters the gas turbine at 730^0C and expands to original pressure. Calculate the work ratio and the thermal efficiency when gas turbine plant operates on a brayton cycle. Assume $\gamma = 1.4$, Cp=1.0 kJ/kgK for air and $\gamma = 1.3$, Cp=1.1 kJ/kgK for gases. Neglect the mass of fuel	D09,JN15,MAY12	7

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ASSIGNMENT 6

SUB : PPE(2171910) 7TH ME

NO	QUESTION	YEAR	MARKS
1	Advantages and Disadvantages of Nuclear Power Plant.	D09	4
2	Explain: Nuclear fusion and fission processes.	D11,JN14,MAY11	4
3	Explain: Chain reaction.	D09,D11, JN13,MAY11	7
4	Give Classification of reactors.	D10	5
5	Explain: Gas cooled reactor.	D09	4,6,7
6	Explain: Fast breeder reactor.	D11,D13,JN14	3,7
7	Explain with neat sketch construction and working of CANDU typereactor.	D09,JN15,MAY12	5,7
8	Draw neat sketch of Pressurized Water Reactor (PWR) and Boiling Water Reactor (BWR).	D11,D13,JN14	7
9	Explain: Nuclear waste and its disposal.	D09,JN15,MAY12	7

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ASSIGNMENT 7

SUB : PPE(2171910) 7TH ME

NO	QUESTION	YEAR	MARKS
1	Draw Load curve for Urban City and Industrial.	D09	4
2	Explain and Draw Load Duration Curve.	D11,JN14	3
3	Explain: Average Load ,Plant Capacity Factor ,Load Factor	D09,D11, JN13,MAY11	7
4	What is important of Load Factor?	D10	5
5	EXPLAIN, a. Demand, b. Maximum Load , c. Plant Use Factor	D09, D10,JA13,15,JN14	4,6,7
6	How Diversity Factor effecting cost?	D11,D13,JN14	3,7
7	A power plant has following annual factors: Load factor = 0.75, Capacity factor = 0.60, Maximum demand is = 60 MW. Estimate, (a) The annual energy production, (b) The reserve capacity over and above the peak load, and (c) the hours during which the plant not in service.	D09,JN15,MAY12	5,7
8	A thermal power plant of 170 MW capacities has the maximum load of 130 MW. Its annual load factor is 0.6. The coal consumption is 1.2 kg per kWh of energy generated and the cost of coal Rs. 850 per tonne. Calculate (i) the annual revenue earned if energy is sold at Rs. 2 per kWh and (II) The capacity factor of the plant.	D11,D13,JN14	7

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