Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VII

Course Code: MEE 7012 and Course Name: Power plant engg

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	The proper indication of incomplete combustion is
Option A:	high CO content in flue gases at exit
Option B:	high CO2 content in flue gases at exit
Option C:	high temperature of flue gases
Option D:	the smoking exhaust from
Q2.	India's first nuclear power plant was installed at
Option A:	Tarapore
Option B:	Kota
Option C:	Kalpakkam
Option D:	Chandrapur
Q3.	The energy radiated by sun on a bright sunny day is approximately
Option A:	700 W/m2
Option B:	800 W/m2
Option C:	1 kW/m2
Option D:	2 kW/m2
Q4.	Thorium Breeder Reactors are most suitable for India because

Option A:	these develop more power
Option B:	its technology is simple
Option C:	abundance of thorium deposits are available in India
Option D:	these can be easily designed
Q5.	The power output from a hydro-electric power plant depends on which three parameters ?
Option A:	Head, discharge and efficiency of the system
Option B:	Head, type and dam of discharge
Option C:	Efficiency of the system, type of draft tube and type of turbine used
Option D:	Type of dam, discharge and type of catchment area
Q6.	The flow duration curve at a given head of a hydroelectric plant is used to determine
Option A:	Diversity factor of the plant
Option B:	Total power at the site
Option C:	Total energy available
Option D:	Load factor of the plant
Q7.	In hydroelectric power plant
Option A:	operating cost is low and initial cost is high
Option B:	operating cost is high and initial cost is low
Option C:	both operating cost as well as initial costs are high
Option D:	both operating cost as well as initial cost are low
Q8.	The pumped storage scheme is employed to supply.
Option A:	during the peak hours.

Option B:	during the off-peak hours.
Option C:	system base load.
Option D:	System based hours
Q9.	If the discharge is 1 m3/s and head of the water is 1 m, then the power generated by the alternator in one hour(assume 100% efficiency of generator and turbine) will be
Option A:	10 kW.
Option B:	73/75 kW.
Option C:	736/75 kW.
Option D:	100 kW.
Q10.	In a boiler installation the natural drauught is produce
Option A:	Due to the fact that furnace gases being light go through the chimeny giving place to cold air from outside to rush
Option B:	Due to the fact that pressure at the grate due to cold column is higher than the pressure at the chimney base due to hot column
Option C:	Due to the fact that at the chimeny top the pressure is more than its enviromental pressure
Option D:	Due to the fact that pressure at grate due to cold cloumn is higher than the pressure at the chimeny base due to hot column
Q11.	The cooling section in the surface condenser
Option A:	Increases the quantity of vapour extracted along with air
Option B:	Reduces the quantity of vapour extracted along with water
Option C:	Does not affect vapour quantity extracted but reduces pump capacity of air extractin pump
Option D:	Reduces the quantity of vapour extracted along with air

Q12.	Economisers improve boiler efficency by
Option A:	1 to 5%
Option B:	4 to 10%
Option C:	10 to 12 %
Option D:	6 to 10%
Q13.	Travelling grate stoker can burn coals at the rate of
Option A:	50-75 kg/m per hour
Option B:	75-100 kg/m per hour
Option C:	100-150 kg/m per hour
Option D:	150-200kg/m per hour
Q14.	Which among these is the main component of a gas turbine plant?
Option A:	Condenser
Option B:	Compressor
Option C:	Boiler
Option D:	Both Compressor & Boiler
Q15.	Which type of compressor is used in a gas turbine plant?
Option A:	Reciprocating compressor
Option B:	Screw compressor
Option C:	Multistage axial flow compressor
Option D:	Either Reciprocating compressor & Screw compressor
Q16.	The gas turbine power plant mainly uses which among the following fuels?
Option A:	Coal and Peat

Option B:	Kerosene oil and diesel oil and residual oil
Option C:	Gas oil
Option D:	Natural gas and liquid petroleum fuel
Q17.	In gas turbine, intercooler is placed ___
Option A:	before low pressure compressor
Option B:	in between low pressure compressor and high pressure compressor
Option C:	in between high pressure compressor and turbine
Option D:	in between low pressure turbine and high pressure turbine
Q18.	Gas and Steam turbine combined power plant produces more electricity than traditional power plants by how much percent?
Option A:	25-28
Option B:	40-42
Option C:	50-53
Option D:	100-200
Q19.	In economics of nuclear power plant taxes and insurance charges are taken as
Option A:	operating cost
Option B:	maintenance cost
Option C:	capital cost
Option D:	fixed cost
Q20.	Which of the following are not taken as operation and maintenance cost in economics of nuclear power plant?
Option A:	Taxes and insurance
Option B:	Salaries and wages of staff

Option C:	Cost of waste disposal
Option D:	Cost of processing materials
Q21.	What is the overall efficiency of nuclear power plant?
Option A:	20 to 25%
Option B:	25 to 30%
Option C:	30 to 40 %
Option D:	50 to 70 %
Q22.	The land area required for installation of nuclear power plant is _____
Option A:	more than thermal power plant
Option B:	less than thermal power plant
Option C:	equal to thermal power plant
Option D:	depends on type of construction
Q23.	The area under the load curve represents
Option A:	the average load on power system
Option B:	maximum demand
Option C:	load factor
Option D:	number of units generated
Q24.	Load duration curve indicates
Option A:	the number of hours for which the particular load lasts during a day
Option B:	total number of units generated for the given demand
Option C:	total energy consumed by the load
Option D:	the variation of load during different hours of the day

Q25.	In practice what is the value of diversity factor?
Option A:	Less than Unity
Option B:	Greater than Unity
Option C:	Equal to or greater than Unity
Option D:	Less than zero