

07 (Power Plant)

1. (Power Plant Cycle)

(UTTARAKHAND JE- I 2013)

1. Combined cycle power plants may need
 - (a) MHD generator
 - (b) Thermionic converter
 - (c) Thermoelectric generator
 - (d) All of the above**

2. (Thermal Plant Cycle)

(UPVUNL 2015)

3. Depreciation charges are high in the case of:

- (a) Thermal plant**
- (b) Diesel plant
- (c) Hydroelectric plant
- (d) Wind power plant

(UPVUNL 2015)

4. Which of the following in a thermal power plant is not a fixed cost?

- (a) Fuel Cost**
- (b) Interest on capital
- (c) Depreciation
- (d) Insurance charges

(UPVUNL 2015)

1. Which of the following curve depicts heat rate (HR) versus power (P) curve for a power station?

- (a)

(LMRC 2015)

2. The overall efficiency of a thermal power plant is equal to:

FUTURE SECURE INSTITUTE™

POWER PLANT QUESTIONS PAPER

- (a) Ranking cycle efficiency
- (b) Carnot cycle efficiency
- (c) Regenerative cycle efficiency
- (d) **Boiler efficiency X Turbine efficiency X Generator efficiency**

(LMRC 2015)

3. Which of the following coals has the highest calorific value?

- (a) Peat
- (b) Lignite
- (c) Bituminous
- (d) **Anthracite**

(LMRC 2015)

4. Compounding of steam is done for:

- (a) Reducing the work done
- (b) Increasing the rotor speed
- (c) **Reducing the rotor speed**
- (d) Balancing the turbine

(UTTARAKHAND JE-II 2013)

5. Major share of power generated in India is through

- (a) **Thermal power plants**
- (b) Nuclear power plants
- (c) Hydro-electric power plants
- (d) Solar energy

(UTTARAKHAND JE-II 2013)

6. The advantage of using pulverized fuel include

- (a) Higher boiler efficiency
- (b) Easy and complete combustion
- (c) Low air requirement
- (d) **All of these**

(UPSSSC 2015)

7. In a thermal power plant, feed water heaters, super heater and air preheaters are mainly used to

- (a) Have a better dust removal in the plant
- (b) Have a better Ash removal in the plant
- (c) **Increase the efficiency of the plant**
- (d) None of the above

(UPSSSC 2015)

FUTURE SECURE INSTITUTE™

POWER PLANT QUESTIONS PAPER

8. Through which source is maximum electricity generated in the world?

- (a) Water
- (b) Nuclear power
- (c) **Coal**
- (d) Solar power

(UPSSSC 2015)

9. Coal used in power plant is also known as

- (a) **Steam coal**
- (b) Charcoal
- (c) Coke
- (d) Soft coal

(UTTARAKHAND JE- I 2013)

15. The cost of the fuel transportation is minimum in:

- (a) Steam power plant
- (b) Diesel power plant
- (c) **hydro-electric plant**
- (d) Coal based power plant

(UTTARAKHAND JE- I 2013)

16. In thermal power plant, the pressure of working cycle is developed by

- (a) Condense
- (b) Super heater
- (c) **Feed water pump**
- (d) Turbine

(UTTARAKHAND JE- I 2013)

17. The pH value of water used for boiler of thermal power plant is

- (a) Unity
- (b) 7
- (c) **Slightly more than 7**
- (d) 10

FUTURE SECURE INSTITUTE™
POWER PLANT QUESTIONS PAPER

(UPPCL 2016)

18. For the proper combustion of fuel in a thermal power plant, a proper circulation of air is also needed. The same is provide with the help of-

- (a) **Draft fan**
- (b) Economiser
- (c) Condenser
- (d) Cooling Tower

(UPPCL 2016)

19. Super heater is employed to-

- 1. Remove moisture from the vapours
- 2. Increase the temperature of vapours
- 3. Heat the feed water

Which of the given statements is incorrect?

- (a) 2 and 3
- (b) **Only 3**
- (c) 1 and 2
- (d) Only 1

(UPPCL 2016)

21. What is separated with the help of magnetic separators in a coal preparation plant?

- (a) Pebbles
- (b) **Iron particles**
- (c) Dust
- (d) Sand

(LMRC SC/TO 2015)

- 1. A condenser in a thermal power plant condenses steam coming out of:

FUTURE SECURE INSTITUTE™

POWER PLANT QUESTIONS PAPER

- (a) Boiler
- (b) Turbine**
- (c) Economiser
- (d) Super heater

(LMRC SC/TO 2015)

2. In a thermal power plant, which is true for a superheater?
- (a) In a superheater pressure rises and temperature remains the same
 - (b) In a superheater, temperature rises and pressure drops
 - (c) In a superheater, pressure rises and temperature drops
 - (d) In a superheater, temperature rises and pressure remains unchanged**

(MPJE 2016 Evening Shift)

3. Which is not fundamental element of cogeneration plant?
- (a) Prime mover
 - (b) Electricity generator
 - (c) Heat recovery system
 - (d) Power factor improvement system**

(DMRC 2014)

4. Induced draft fans are located at:
- (a) The top**
 - (b) The bottom
 - (c) In the middle part
 - (d) Can be anywhere, in the colling tower

3. (Hydrology)

(UPRVUNL 2015)

6. The annual depreciation of a hydro power plant is about:
- (a) 0.5-1.5%**
 - (b) 5-10%
 - (c) 10-20%
 - (d) 25-30%

(LMRC 2015)

7. Francis and Kaplan turbines fall under the category of:

FUTURE SECURE INSTITUTE™

POWER PLANT QUESTIONS PAPER

- (a) Impulse turbine
(b) **Reaction turbine**
(c) Axial flow
(d) Impulse and reaction combined
- (LMRC 2015)**
8. For the same power output, operating charges are minimum in a:
(a) Gas turbine plant
(b) **Hydro power plant**
(c) Thermal plant
(d) Nuclear plant
- (LMRC 2015)**
6. A very high speed hydro electric plant use:
(a) Francis turbine
(b) Propeller turbine
(c) **Pelton wheel**
(d) Kaplan turbine
- (LMRC SC/TO 2015)**
7. The flow duration curve at a given head of a hydroelectric plant is used to determine:
(a) Diversity factor of the plant
(b) Total power at the site
(c) Total energy available
(d) Load factor of the plant
- (SSCJE 2007)**
8. Francis Turbine is a –
(a) Axial flow turbine
(b) **Radial flow turbine**
(c) Impulse turbine
(d) Outward flow turbine
- (SSCJE 2011)**
9. Low head plants generally use:
(a) Pelton turbines
(b) Francis turbines
(c) **Kaplan turbines**
(d) Both (a) and (b)
- (SSCJE 2009)**
10. In reaction turbine:

FUTURE SECURE INSTITUTE™

POWER PLANT QUESTIONS PAPER

- (a) **Kinetic energy is appreciable as the fluid leaves the runner and enters the draft tube**
- (b) The vanes are partly filled
- (c) Total energy of fluid is converted to kinetic energy in the runner
- (d) It is exposed to the atmosphere

(UTTARAKHAND JE- II 2013)

14. Horizontal axis and vertical axis are the types of:

- (a) Nuclear Reactor
- (b) Wind Mills**
- (c) Bio Gas Reactor
- (d) Solar Cell

(MPJE 2016 Evening Shift)

15. In hydro power station which components is used to setup the generating voltage to a suitable transmission voltage?

- (a) Transformer**
- (b) Generator
- (c) Transmission line
- (d) Turbine

(UTTARAKHAND JE- I 2013)

1. Kaplan turbines are used whenever the water head is

- (a) Low**
- (b) High
- (c) Medium
- (d) (b) and (c)

(UTTARAKHAND JE- I 2013)

2. Economisers are used to heat

- (a) Coal
- (b) Air
- (c) Steam
- (d) Feed water**

FUTURE SECURE INSTITUTE™
POWER PLANT QUESTIONS PAPER

(UTTARAKHAND JE- I 2013)

3. The expression for power plant output in kilo-watt of a hydro-electric plant is given by
- (a) $0.736 Q.W.h/75 X \eta_0$
 - (b) $0.736 Q.W.h.\eta_0/75$**
 - (c) $75 Q.W.h.\eta_0/0.736$
 - (d) None of these

(UTTARAKHAND JE- I 2013)

4. Which alternator will have more number of poles?
- (a) Coupled to steam turbine
 - (b) Coupled to gas turbine
 - (c) Coupled to hydraulic turbine**
 - (d) None of these

(UPPCL 2016)

5. Which turbine is depicted by the given picture?
- (a) Francis
 - (b) Curtis
 - (c) Kaplan
 - (d) Pelton Wheel**

(UPPCL 2016)

23. Sluice gates and automated isolating valves are components of-

- (a) Valve-House**
- (b) Head race
- (c) Spill Way
- (d) Penstock

(UTTARAKHAND JE –I 2013)

24. Which of the following components is not a part of hydro-electric plant?

- (a) Penstock
- (b) Spillway
- (c) Surge tank
- (d) Economiser**

4. (Nuclear Power Plant)

(LMRC 2015)

FUTURE SECURE INSTITUTE™

POWER PLANT QUESTIONS PAPER

2. Which of the following is used as moderator in nuclear power plants?

- (a) Sodium
- (b) Graphics
- (c) **Heavy water**
- (d) Hydrogen

(SSCJE 2010)

3. The moderator used in fast breeder reactor is-

- (a) Heavy water
- (b) Graphite
- (c) Ordinary water
- (d) **Any of the above**

(UTTARAKHAND JE –I 2013)

4. Out of the following plant categories:

- (i) Nuclear
- (ii) Run-off river
- (iii) Pump storage
- (iv) Diesel

The base load power plants are

- (a) **(i) and (ii)**
- (b) (ii) and (iii)
- (c) (i), (ii) and (iii)
- (d) (i), (iii) and (iv)

(UPPCL 2016)

5. Which of the following will produce the largest amount of energy?

- (a) Buring of 1 kg petrol
- (b) Burning of 1 kg anthracite
- (c) Burning of 10 kg wood
- (d) **Nuclear fission of 1 kg uranium**

(UPPCL 2016)

6. Kalpakkam, Tarapore and Kota are famous for-

- (a) Hydel Power Plants
- (b) **Nuclear Power Plants**
- (c) Thermal Power Plants
- (d) Diesel Power Plants

(UTTARAKHAND JE- I 2013)

FUTURE SECURE INSTITUTE™

POWER PLANT QUESTIONS PAPER

9. The first nuclear power plant was built in India at which place?

- (a) **Tarapur**
- (b) Rana Pratap Sagar
- (c) Kalpakkam
- (d) Narora

(UTTARAKHAND JE- I 2013)

10. Which one is not a commonly used coolant for fast breeder reactor?

- (a) **Water**
- (b) Liquid metal
- (c) Helium
- (d) Carbon dioxide

(LMRC SC/TO 2015)

11. Which of the following is introduced to control chain reaction in a nuclear reactor?

- (a) Brass rods
- (b) **Cadmium rods**
- (c) Iron rods
- (d) Graphite rods

5. (Diesel Engine Power Plant)

(UTTARAKHAND JE- II 2013)

1. A diesel power station spends 0.25 kg/k Wh fuel. If the calorific value is 10,000 kcal/kg then overall efficiency of the power station will be

- (a) 25%
- (b) 30%
- (c) **34.4%**
- (d) 100

(UPSSSC 2016), (UPSSSC 2015)

2. Which of the following is not part of diesel engine power plant?

- (a) Cooling tower
- (b) **Penstock**
- (c) Oil pump

(d) Strainer

(UPSSSC 2015)

3. Which of them is peak load station?

- (a) Small capacity thermal plants
- (b) Diesel stations
- (c) Run off river plant
- (d) All of them**

7. (Gas Turbine Power Plant)

(UPRVUNL 2015)

1. Capacitor cost of a gas turbine plant is..... Than that of a steam power plant of same capacity.

- (a) Same
- (b) Less**
- (c) More
- (d) Irrelevant

(UPSSSC 2015)

2. Compressor used in gas turbines is

- (a) Reciprocating compressor
- (b) Plunger type compressor
- (c) Screw compressor
- (d) Multistage axial flow compressor**

(MPJE 2016 Evening Shift)

3. Which is the negative grid voltage for a given plate potential at which ionization of the gas starts?

- (a) Grid baffles
- (b) Control grid
- (c) Thyatron
- (d) Critical grid voltage**

(UTTARAKHAND JE –I 2013)

4. A gas turbine power plant is best suited for

- (a) Base load
- (b) Peak load**
- (c) Emergency purpose
- (d) None of the above

7. (Combined working of Power Plant)

(UPRVUNL 2015)

2. A low utilization factor for a plant indicates that plant is:

- (a) **Used for stand by purpose**
- (b) Under maintenance
- (c) Used for base load only
- (d) Used for speak as well as base load

(UPRVUNL 2015)

3. $P = 30 - 8 \sin(kt) + 0.325t$ MW

T – time in hours of a day:

K = 0.6 rad/sec

There are three generators of 15 MW each. Determine the maximum demand on the system.

- (a) **43.9 MW**
- (b) 44.6 MW
- (c) 52.7 MW
- (d) 67.2 Mw

(UPRVUNL 2015)

4. It is given that for a system, the equivalent radius of radius of each conductor is 'X'. Find the equivalent radius of self-GMD) geometric mean distance) of four bundled conductor apart by a distance 'a' from their centers.

- (a) $1.024 X \frac{1}{2} a^{\frac{3}{4}}$
- (b) **$1.024 x \frac{1}{4} a^{\frac{3}{4}}$**
- (c) $2.024 X \frac{1}{4} a^{\frac{3}{2}}$
- (d) $2.024 X \frac{1}{2} a^{\frac{3}{2}}$

(SSCJE 2011)

5. The capacity factor of a plant is given by

- (a) Maximum load/average load
- (b) Average load/maximum load
- (c) **Average load/plant capacity**
- (d) Maximum load/plant capacity

(SSCJE 2011)

6. In a power supply system, "demand factor" is defined as

- (a) Average demand/ maximum demand
- (b) Maximum demand/ installed capacity
- (c) Average demand/ installed capacity
- (d) **Maximum demand/ connected load**

FUTURE SECURE INSTITUTE™
POWER PLANT QUESTIONS PAPER

(SSCJE 2011)

7. When a source is delivering maximum power to the load, the efficiency will be?
- (a) **50%**
 - (b) Maximum
 - (c) Above 50%
 - (d) Below 50%

(SSCJE 2011)

8. 1 Ton (unit of air conditioning load) in terms of kW is
- (a) **3.5 kW**
 - (b) 4.7 kW
 - (c) 12 kW
 - (d) 10.5 kW

(MPJE 2015)

9. Energy quantity index is equal to:
- (a) Energy used/ Energy input
 - (b) Energy availability of output/ Energy availability of input
 - (c) Energy availability of input/ Energy availability of output
 - (d) **Energy input/ Energy used**

(MPJE 2015)

10. Which is not fundamental element of cogeneration plant?
- (a) Prime mover
 - (b) Electricity generator
 - (c) Heat recovery system
 - (d) **Power factor improvement system**

(MPJE 2016) Morning Shift

11. Which of the following industries will consume maximum power per tonne of product?
- (a) Zinc
 - (b) **Aluminum**
 - (c) Alloy steel
 - (d) Cement

(SSCJE 2010)

12. The value of diversity on

FUTURE SECURE INSTITUTE™

POWER PLANT QUESTIONS PAPER

- (a) Less than one
- (b) Greater than one**
- (c) Equal to one
- (d) Any one of the above

8. (Non-conventional Sources of Energy)

(UTTARAKHAND JE-II 2013)

1. India receives solar energy in the range of
- (a) 5-7k Wh/m² for 300-330 days in a year**
 - (b) 50-70 k Wh/m² for 300-330 days in a year
 - (c) 5-7 k Wh/m² for 200-230 days in a year
 - (d) 50-70 k Wh/m² for 200-230 days in a year

(UTTARAKHAND JE-II 2013)

2. Biogas comprises mainly of
- (a) 60% oxygen and 40% carbon dioxide
 - (b) 60% oxygen and 40% methane
 - (c) 60% methane and 40% methane
 - (d) 60% methane and rest carbon dioxide**

(UTTARAKHAND JE-II 2013)

3. The possible site for Geothermal energy extraction for the purpose of electricity in India is
- (a) Madhya Pradesh**
 - (b) Kerala
 - (c) Tamil Nadu
 - (d) Assam

(UTTARAKHAND JE-II 2013)

4. Match Lists L-I and L-II below, in respect of India's installed capacity of non-conventional energy, as on date.

List-I	List-II
1. Solar Power	A. 2800 MW
2. Wind Power	B. 3063 MW
3. Bagass Cogeneration	C. 1365 MW
4. Biomass Power	D. 22,465 MW

FUTURE SECURE INSTITUTE™
POWER PLANT QUESTIONS PAPER

1 2 3 4

- (a) A B C D
- (b) B A C D
- (c) D B A C
- (d) **B D A C**

(UTTARAKHAND JE-II 2013)

5. Minimum wind speed required for generating electricity in a wind mill is
- (a) 15 m/hour
 - (b) 1 km/hour
 - (c) **15 km/hour**
 - (d) None of these

(MPJE 2016, Morning Shift)

6. Which function cannot be specified for all times by simply knowing a finite segment?
- (a) The unit step functions
 - (b) The unit impulse functions
 - (c) **Non periodic function**
 - (d) The exponential function

(MPJE 2016, Morning Shift)

7. Non- Conventional methods of power generation is/are-
- (a) Solar power generation
 - (b) Thermionic converters
 - (c) **Both of the above**
 - (d) None of these

(UPPCL 2016)

9. Which of the following statements is false?

- (a) **The amount of Tidal energy is independent of range of tides.**
- (b) Biogas contains approximately 70% of methane.
- (c) The manner we get from biogas plant easily mixes with the soil
- (d) Solar energy can be employed for running water pumps

(UPPCL 2016)

10. A Geothermal field products-

FUTURE SECURE INSTITUTE™

POWER PLANT QUESTIONS PAPER

1. Hot water

2. Wet steam

3. Dry steam

The correct amongst the given is-

- (a) 1 and 2
- (b) 1 and 3
- (c) 1,2, and 3**
- (d) None

9. (Recent development in Generation of Electrical Energy)

(UTTARAKHAND JE- II 2013)

1. Global warming is mainly due to
 - (a) Emission of heat from engines
 - (b) Emission of CO₂ due to burning to fossil fuels**
 - (c) Use of nuclear energy
 - (d) Air pollution

(MPJE 2015)

2. Which of the following is not a type of energy audit?
 - (a) Walk through
 - (b) Mini Audit
 - (c) Average Audit**
 - (d) Maxi Audit