**MCQs on Unit II**

**Steam Condenser and Environmental Impacts of Thermal Power Plant**

1. The function of a condenser in a [thermal power plant](https://www.mechanicaltutorial.com/introduction-and-types-of-thermal-power-plant) is .......

   A.To act as reservior to receive steam for [turbine](https://www.mechanicaltutorial.com/working-principle-of-steam-turbine-classification-or-types-of-steam-turbine)

   B.To condense steam into condensate to be reused again

   C.To create vaccum

   D.All of the above

✔ View Answer**:** D.All of the above

1. The commonly used material of pipes in condensers is.......

   A.Mild steel

   B.Stainless steel

   C.Cast iron

   D.Admiralty brass

✔ View Answer**:** D.Admiralty brass

1. A condenser where circulating water flows through tubes which are surrounded by steam,is known as.........

   A.Surface condenser

   B.Jet condenser

   C.Barometric condenser

   D.Evaporative condenser

✔ View Answer**:** A.Surface condenser

1. The vaccum obtainable in a condenser is dependent upon......

   A.Capacity of ejector

   B.Quantity of steam to be handeled

   C.Any of above two is possible

   D.Types of condenser used

   E.Temperature of cooling water

✔ View Answer**:** E.Temperature of cooling water

1. The ratio of actual vaccum to the ideal vaccum in a condenser is called.......

   A.Condenser efficiency

   B.Vaccum efficiency

   C.[Boiler](https://www.mechanicaltutorial.com/operation-and-types-of-steam-boiler) efficiency

   D.Nozzle efficiency

✔ View Answer**:** B.

1. A condenser in a steam power plant is .......

   A.Increases expansion ratio of steam

   B.Reduces back pressure of steam

   C.Reduces temperature of exhaust steam

   D.All of the above

✔ View Answer**:** D.

1. The temperature of condensate is.......on leaving the condenser than that of circulating water at inlet

   A.Higher

   B.Lower

   C.Same

✔ View Answer**:** A.Higher

1. The vaccum obtainable in a condenser is dependent upon.........

   A.Capacity of ejector

   B.Quantity of steam to be handeled

   C.Any of the two is possible

   D.Temperature of cooling water

✔ View Answer**:** D.

1. The actual vaccum in a condenser is equal to......

   A.Barometric pressure + actual pressure

   B.Barometric pressure - actual pressure

   C.Gauge pressure + atmospheric pressure

   D.Gauge pressure - atmospheric pressure

✔ View Answer**:** B.

1. A condenser condenses the steam coming out from\_\_\_\_\_\_\_\_\_\_\_.  
   a. Boiler  
   b. Turbine  
   c. Economiser  
   d. Super heater.

✔ View Answer**: b. Turbine**

1. Water used in the steam plant is used for cooling in\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  
   a. Condenser  
   b. Turbine only  
   c. Boiler tube  
   d. Boiler tubes and turbines

✔ View Answer**: a.**

1. What is use of the air pumps in the condenser?  
   a. Remove water  
   b. Air leaking in the condenser and to maintain the vacuum.  
   c. Maintain atmospheric pressure and the condenser.  
   d. Both (a) & (b).

✔ View Answer**: b**

1. Spray ponds are used to cool the warm water coming from the condenser in \_\_\_\_\_\_\_\_  
     
   a. Large power plants  
   b. Small power plants  
   c. Medium power plants  
   d. Both medium and large power plants.

✔ View Answer**: b.**

1. Evaporative type of condenser has  
   a. Water in pipes surrounded by steam outside.  
   b. Steam and cooling water mixed to give the condensate.  
   c. Steam in pipes surrounded by water.  
   d. None of the above.

✔ View Answer ANS: C

1. A condenser condenses steam coming from the

(a)  Boiler

(b) Super heater

(c) Economizer

(d) None

✔ View Answer ANS: (d)

1. A condenser in a steam thermal plant

(a) Decreases expansion ratio in the turbine

(b) Decreases back pressure of steam

(c) Increases condensation temperature

(d) None

✔ View Answer ANS: (b)

1. Hot water coming out of condenser is cooled in a

(a) Shell and tube heat exchanger

(b) In a finned tube heat exchanger

(c) In a cooling pond

(d) None

✔ View Answer ANS: C

1. Surface condenser is one in which

(a) Steam passes through the tubes and the water is outside

(b) Air passes through the tubes and the water is outside

(c) Water passes through the tubes and the steam is outside

(d) None

✔ View Answer ANS: C

1. In a surface condenser, condensate and cooling water are

(a) Mixed fully

(b) Mixed partially

(c) Not mixed

(d) None

✔ View Answer ANS: C

1. In a Jet condenser, condensate and cooling water are

(a) Mixed fully

(b) Mixed partially

(c) Not mixed

(d) None

✔ View Answer ANS: (a)

1. Pressure in the condenser of a steam plant is

(a) More than atmospheric

(b) Equal to atmospheric

(c) Less than atmospheric

(d) None

✔ View Answer ANS: C

1. Surface condensers and jet condensers of the same cooling capacity are compared

(a) Overall size is bigger of the surface condenser

(b) Sizes are equal

(c) Size of the surface condenser is smaller than the jet condenser

(d) None

✔ View Answer ANS: (a)

1. Condensate can be used as feed water in a

(a) Jet condenser

(b) Surface condenser

(c) Both in Jet and Surface condenser

(d) None

✔ View Answer ANS: (b)

1. Cooling capacity of surface condensers is

(a) Greater than that of Jet condensers

(b) Equal to that of Jet Condenser

(c) Less than that of Jet condensers

(d) None

✔ View Answer ANS: (a)

1. Cooling water requirements for the same cooling capacity is

(a) Greater in Jet condenser

(b) Same in Jet and surface condemnser

(c) Less in Jet condenser

(d) None

✔ View Answer ANS: (c)

1. For same cooling requirements, maintenance cost is

(a) Less in Jet condenser

(b) Equal in both surface and Jet condenser

(c) More in Jet condenser

(d) None

✔ View Answer ANS:(a)

1. For the same cooling requirements, power to operate the air pump are

(a) More in a Jet condenser

(b) Less in a Jet condenser

(c) Same in Jet and surface condenser

(d) None

✔ View Answer ANS: (a)

1. For the same cooling requirements, power used in pumping water is

(a) More in Jet condensers

(b) Less in a Jet condenser

(c) Equal both in Jet and Surface condenser

(d) None

✔ View Answer ANS: (a)

1. The actual vacuum in a condenser is

(a) Barometric pressure+ Actual pressure

(b) Gauge pressure—atmospheric pressure

(c) Gauge pressure + atmospheric pressure

(d) None

✔ View Answer ANS: (b)

1. The ratio of actual vacuum to the ideal vacuum in a condenser is called

(a) Boiler efficiency

(b) Condenser efficiency

(c) Vacuum efficiency’

(d) None

✔ View Answer ANS: ©

1. The temperature of the condensate is

(a) Higher than the temperature of the cooling water

(b) Lower than the temperature of the cooling water

(c) Equal to the temperature of the cooling water

(d) None

✔ View Answer ANS: (a)

1. The condenser in a steam power plant is placed between the

(a) Boiler and turbine

(b) Pump and the boiler

(c) Turbine and the pump

(d) None

✔ View Answer ANS: C

1. The condenser used in thermal power plant is

(a) Air cooled

(b) Water Cooled

(c) Evaporative Cooled

(d) None

✔ View Answer

ANS: (c)

1. When air is removed in a surface condenser

(a) Absolute pressure decreases

(b) Absolute pressure increases

(c) Absolute pressure remains constant

(d) None

(ANS: ( a)

1. In jet type condensers

(a) cooling water passes through tubes and steam surrounds them

(b) steam passes through tubes and cooling water surrounds them

(c) steam and cooling water mix

(d) steam and cooling water do not mix

Ans: c

1. In a shell and tube surface condenser

(a) steam and cooling water mix to give the condensate

(b) cooling water passes through the tubes and steam surrounds them

(c) steam passes through the cooling tubes and cooling water surrounds them

(d) all of the above varying with situation

Ans: b

1. In a surface condenser if air is removed, there is

(a) fall in absolute pressure maintained in condenser

(b) rise in absolute pressure maintained in condenser

(c) no change in absolute pressure in the condenser

(d) rise in temperature of condensed steam

Ans: a

1. The cooling section in the surface condenser

(a) increases the quantity of vapour extracted along with air

(b) reduces the quantity of vapour extracted along with air

(c) does not affect vapour quantity extracted but reduces pump capacity of air extraction pump

(d) none of the above

Ans: b

1. Edward’s air pump

(a) removes air and also vapour from condenser

(b) removes only air from condenser

(c) removes only un-condensed vapour from condenser

(d) removes air alongwith vapour and also the condensed water from condenser

Ans: d

1. In a steam power plant, the function of a condenser is

(a) to maintain pressure below atmospheric to increase work output from the primemover

(b) to receive large volumes of steam exhausted from steam prime mover

(c) to condense large volumes of steam to water which may be used again in boiler

(d) all of the above

Ans: d

1. In a regenerative surface condenser

(a) there is one pump to remove air and condensate

(b) there are two pumps to remove air and condensate

(c) there are three pumps to remove air, vapour and condensate

(d) there is no pump, the condensate gets removed by gravity

Ans: b

1. Evaporative type of condenser has

(a) steam in pipes surrounded by water

(b) water in pipes surrounded by steam

(c) either (a) or (b)

(d) none of the above

Ans: a

1. Pipes carrying steam are generally made up of

(a) steel

(b) cast iron

(c) copper

(d) aluminium

Ans: a

1. Which of the following power plant causes highest amount of air pollution?  
   a) Thermal power plant  
   b) Hydroelectric power plant  
   c) Nuclear power plant  
   d) Geothermal power plant  
   View Answer Answer: a
2. Which of the following gas is not emitted during combustion of coal?  
   a) Oxides of sulphur  
   b) Oxides of Nitrogen  
   c) Oxides of Mercury  
   d) Oxides of carbon  
   View Answer Answer: c
3. Which of the following pollutants emitted by thermal power plant causes irritation in Eyes?  
   a) Oxides of sulphur  
   b) Oxides of Nitrogen  
   c) Oxides of Mercury  
   d) Oxides of carbon  
   View Answer Answer: b
4. Which of the following pollutants emitted by thermal power plant is a cause of global warming?  
   a) NO  
   b) CO2  
   c) SO2  
   d) NO2  
   View Answer Answer: b
5. Which of the following pollutant causes acid rain?  
   a) NO  
   b) CO2  
   c) SO2  
   d) NO2  
   View Answer Answer: c
6. Which of the following is mostly affected by thermal power plant pollutants?  
   a) Lithosphere  
   b) Atmosphere  
   c) Hydrosphere  
   d) Exosphere  
   View Answer Answer: b
7. 2. Which one of the following can cause thermal pollution?  
   a) Residential houses  
   b) Power plants  
   c) Death of marine organisms  
   d) Oil spill  
   View Answer Answer: b
8. 1. What is called when an industry removes water from a source and then returns the heated water to its source?  
   a) Water pollution  
   b) Soil pollution  
   c) Air pollution  
   d) Thermal pollution  
   View Answer Answer: d
9. What is the effect of warmer temperature to the fishes?  
   a) Increase the metabolism  
   b) Decrease the metabolism  
   c) Stabilize the metabolism  
   d) Increase the solubility of oxygen  
   View Answer Answer: a
10. What is the disadvantage of control measures of thermal pollution by passing the heated water?  
    a) Water is lost due to leakage  
    b) Water is lost due to absorption  
    c) Water is lost due to dilution  
    d) Water is lost due to evaporation  
    View Answer Answer: d
11. Which one of the following cause thermal pollution?  
    a) Release of cold water  
    b) Organic manures  
    c) Purified water  
    d) More number of trees  
    View Answer Answer: a
12. Growing industrial activities is one of the reasons for thermal pollution.  
    a) True  
    b) False  
    View Answer Answer: a
13. How does soil erosion cause thermal pollution?  
    a) By making natural water bodies to hold in its normal level  
    b) By polluting the water bodies  
    c) By avoiding sunlight to fall on the water bodies  
    d) By making natural water bodies to rise beyond their normal level  
    View Answer Answer: d
14. What is a thermal shock?  
    a) Sudden raises of temperature to abnormal level  
    b) Sudden cooling of temperature to abnormal level  
    c) Temperature don’t change  
    d) Temperature change only due to environmental factors  
    View Answer Answer: a
15. What is the main effect of thermal pollution to the oxygen solubility in water bodies?  
    a) They increase the solubility of oxygen in water bodies  
    b) They maintain the solubility of oxygen in water bodies  
    c) They reduce the solubility of oxygen in water bodies  
    d) They don’t cause any affect in solubility of oxygen to the water bodies  
    View Answer Answer: c
16. Which of the following is the main reason for thermal pollution?  
    a) Bio fuels  
    b) Organic farming  
    c) Eco friendly vehicles  
    d) Power plants  
    View Answer Answer: d
17. How does an artificial lake help in solving thermal pollution?  
    a) It stores heated water  
    b) It gives a good aesthetic view  
    c) It helps to breed fishes  
    d) It is used during the summer season where water scarcity cause  
    View Answer Answer: a
18. What is called for the useless heat from hot water recycled by industries?  
    a) Cooling towers  
    b) Recycling  
    c) Heat pump  
    d) Co-generation  
    View Answer Answer: d
19. Generally how many types of cooling towers are there?  
    a) One  
    b) Two  
    c) Three  
    d) Four  
    View Answer Answer: b  
    Explanation: Generally the cooling towers are of two types they are, wet cooling tower and the dry cooling tower.
20. Runoff from paved surfaces can cause thermal pollution.  
    a) True  
    b) False  
    View Answer Answer: a
21. 1. Which of the following is used in ceramic industries?  
    a) Electrostatic precipitator  
    b) Dynamic precipitator  
    c) Spray tower  
    d) Wet cyclonic scrubber  
    View Answer Answer: b
22. 2. Wet scrubbers are classified into \_\_\_\_ types.  
    a) 2  
    b) 3  
    c) 5  
    d) 6  
    View Answer Answer: b
23. 3. The centrifugal collectors are classified into how many types?  
    a) 3  
    b) 4  
    c) 5  
    d) 2  
    View Answer Answer: d
24. 4. Which of the following air pollution control device has maximum efficiency?  
    a) Electrostatic precipitator  
    b) Dynamic precipitator  
    c) Spray tower  
    d) Wet cyclonic scrubber  
    View Answer Answer: a
25. 5. Which of the following fluid is used in web scrubbers?  
    a) Lime  
    b) MgSO4  
    c) NaCl  
    d) K2Cr2O7  
    View Answer Answer: a
26. 6. Which of the following is incorrect regarding the fabric filter?  
    a) They can remove very small particle  
    b) They are liable to chemical attack  
    c) They have low efficiency in comparison to venturi scrubber  
    d) They can handle large volume of gas at relatively high speed  
    View Answer Answer: c
27. 7. Which of the following removes both gaseous and particulate contaminants?  
    a) Venturi scrubber  
    b) Gravitational settling chamber  
    c) Dynamic precipitator  
    d) Wet scrubber  
    View Answer Answer: a
28. 8. Identify the correct statement regarding the Electrostatic precipitator.  
    a) Minimum particle size removal is <0.5μm  
    b) They can be operated at high temperature  
    c) It has a low maintenance cost  
    d) It does not cause any freezing problem  
    View Answer Answer: b
29. Which of the following is not a source of air pollution?

(a) automobile exhaust (c) windmill

(b) burning of firewood (d) power plant

View Answer Answer: c

1. Incomplete combustion of fuel such as petrol and diesel gives

(a) nitrogen oxide (c) carbon monoxide

(b) sulphur dioxide (d) carbon dioxide

View Answer Answer: C

1. Which of the following is not a green house gas?

(a) nitrogen gas (c) methane gas

(b) water vapour (d) carbon dioxide

View Answer Answer: a

1. 1. What is noise?  
   a) Desirable sound  
   b) Desirable and unwanted sound  
   c) Undesirable and unwanted sound  
   d) Undesirable and wanted sound  
   View Answer Answer: c
2. 2. In which unit sound is measured?  
   a) Kilometer  
   b) Pascal  
   c) Kilogram  
   d) Decibel  
   View Answer Answer: d
3. 3. Which pollution cause hearing loss in organisms?  
   a) Air pollution  
   b) Noise pollution  
   c) Water pollution  
   d) Soil pollution  
   View Answer Answer: b
4. 4. What is the dB of a threshold of hearing?  
   a) 0  
   b) 10  
   c) 50  
   d) 100  
   View Answer Answer: a
5. 5. What is the dB of a threshold of pain?  
   a) 100  
   b) 110  
   c) 120  
   d) 146  
   View Answer Answer: d
6. 6. All sound is noise.  
   a) True  
   b) False  
   View Answer Answer: b
7. 7. At what decibel instantaneous rupture of membrane happens?  
   a) 100  
   b) 120  
   c) 146  
   d) 150  
   View Answer Answer: d
8. 8. What is the ambient noise level in the residential one during night time?  
   a) 40 dB  
   b) 45 dB  
   c) 50 dB  
   d) 55 dB  
   View Answer Answer: b
9. 9. What is called for a temporary hearing loss?  
   a) Temporary ear pain  
   b) Temporary hearing problem  
   c) Temporary threshold shift  
   d) Temporary hearing shift  
   View Answer Answer: c
10. 10. What is the permissible noise limit of 120 db?  
    a) 30 minutes  
    b) 2 minutes  
    c) 1 minute  
    d) 30 seconds  
    View Answer Answer: d
11. 11. At what level a sound becomes physical pain?  
    a) Above 50 dB  
    b) Above 70 dB  
    c) Above 80 dB  
    d) Above 100 dB  
    View Answer Answer: c
12. 12. Which of the following sound is pleasant to our ears?  
    a) Heavy machinery  
    b) Transportation equipment  
    c) Loud noise  
    d) Music  
    View Answer Answer: d
13. 13. Wildlife faces more problems than humans due to noise pollution, because animals dependent on\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
    a) Noise  
    b) Sound  
    c) Actions  
    d) Behavior  
    View Answer Answer: b
14. 14. The degree of hearing loss depends on the duration as well as the intensity of the noise.  
    a) True  
    b) False  
    View Answer Answer: a
15. When coal is being burnt how much % of ash is formed compared to the whole amount?  
    a) 10-20%  
    b) 40-50%  
    c) 25-35%  
    d) 4-10%  
    View Answer Answer: a
16. Why is it important to prefer ash handling systems?  
    a) Coal ash produced destroys the machineries by entering into them  
    b) Coal ash produced annually accounts for thousands of tones  
    c) Coal ash can be reutilized for some other purpose  
    d) Coal ash affects the health of people working at plants  
    View Answer Answer: b
17. What is the function of cyclone separators in pneumatic ash handling system?  
    a) To separate the lighter dust particles  
    b) To force up the movement of ash through pipes or tubes  
    c) To draw out the dust from furnace  
    d) To separate minute coal particles  
    View Answer Answer: a
18. Which medium is used to carry ash in the pneumatic ash handling system?  
    a) Conveyor belt  
    b) Water trough  
    c) Air  
    d) Chain belt  
    View Answer Answer: c
19. Which system is noisy out of all the following ash handling systems?  
    a) Steam jet ash handling system  
    b) Mechanical ash handling system  
    c) Pneumatic ash handling system  
    d) Hydraulic ash handling system  
    View Answer Answer: c
20. Gravitational separator works on the principle of\_\_\_\_\_\_\_\_\_\_  
    a) Size of particulate  
    b) Shape of particulate  
    c) Weight of particulate  
    d) Color of the particulate  
    View Answer Answer: c
21. What is the use of baffles in the gravitational separators?  
    a) To separate types of dust  
    b) To settle the dust by letting them to strike  
    c) To control the flow of dust particles  
    d) To blow the dust  
    View Answer Answer: b
22. What is the most effective advantage of gravitational separators?  
    a) They consume no power  
    b) They just need small amount of space for operation  
    c) They are cost effective  
    d) Time taken for operation is very less  
    View Answer Answer: c
23. Which principle does cyclone separator use?  
    a) Gravitational force  
    b) Vortex velocity  
    c) Inertia  
    d) Temperatures of air  
    View Answer Answer: c
24. Cyclone separators are also known as:  
    a) Twist cleaners  
    b) Squall  
    c) Pre-cleaners  
    d) Zephyr cleaners  
    View Answer Answer: c
25. What is called when several cyclone separators are operated parallely?  
    a) Octa-cyclone  
    b) Multi-cyclone  
    c) Center-cyclone  
    d) Para-cyclone  
    View Answer Answer: b
26. What is the range of particulate removing efficiency of cyclone separators?  
    a) 50-99%  
    b) 20-80%  
    c) 70-90%  
    d) 70-95%  
    View Answer Answer: a
27. What is Baghouse?  
    a) Filters arranged in parallel form  
    b) Filters arranged throughout the system  
    c) Filters arranged randomly  
    d) Filters arranged alternatively  
    View Answer Answer: a
28. What is the work of the baghouse filter?  
    a) To remove the hot air from furnace  
    b) To separate the solid particles from dust produced  
    c) To remove dust particles from flue gas  
    d) To wash away the contamination of dust on the walls of furnace  
    View Answer Answer: c
29. What is the use of wet scrubber in the dust collection?  
    a) Remove flue gas  
    b) Remove Scales on the furnace surface  
    c) Remove the dust that has the moisture content  
    d) Remove pollutants  
    View Answer Answer: d