

QUESTION BANK

MODULE 1

1. Differentiate between renewable and non-renewable sources of energy. **(Dec 2014) (July 2015)(July 2016)**
2. Discuss advantages of water tube boilers over fire tube boilers **(Dec 2014)**
3. Explain with neat Sketch, working principle of Lancashire Boiler. **(Dec 2014) (July 2015)**
4. Explain the factors, which favor the use of renewable energy. **(Dec 2014)**
5. What are the various renewable energy resources available and show how wind turbine can be used for electrical power generation, with a neat schematic sketch. **(Dec 2014) (July 2015)**
6. List out any five boiler mountings and explain briefly any two boiler mountings (only Functions) **(Dec 2014)**
7. Define solar constant and explain liquid flat plate collector with a neat sketch **(Jan 2016)**
8. Explain principle of nuclear power plant with a neat sketch **(Jan 2016) (July 2015)**
9. Define enthalpy and explain formation of steam with a T-S diagram **(Jan2016)**
10. Explain Babcock and Wilcox boiler with a neat sketch **(Jan2016)**
11. Explain the working of Hydro electric power plant **(July 2016)**
12. With a neat sketch, explain the working of a water tube boiler shown of flue gases **(July 2015) (July 2016)**
13. Draw a neat sketch of a temperature enthalpy diagram and indicate the following on it: Latent heat of evaporation, Amount of super heat, Sensible heat, Degree of super heat, Saturation temperature **(July 2016) (July 2015)**

MODULE 2

1. Explain with neat sketch, impulse and reaction turbines. **(Dec 2014) (July 2015)**
2. Compare closed cycle gas turbine with open cycle gas turbine. **(Dec 2014)**
3. List any five advantages two-stroke engine over four-stroke engine. **(Dec 2014) (July 2015)**
4. Explain with block diagrams principle of operation cycle and closed cycle gas turbine. **(Dec 2014)**
5. Compare impulse and reaction turbine. **(Dec 2014)**
6. A four stroke diesel engine has a piston diameter 250mm and stroke 400mm. The mean Effective pressure is 4 bar and speed is 500rpm the diameter of stroke drum is 1000mm And the effective brake load is 4000N. Find IP, BP, FP. **(Dec 2014) (July 2015)**
7. Define turbine and explain De Laval turbines with a neat sketch and P-V diagram **(Jan2016)**
8. Explain closed cycle gas turbine with a neat sketch **(Jan2016)**
9. Explain 4-stroke SI engine with a neat sketch and PV diagram **(Jan2016) (July 2015) (july2016)**
10. Define indicated power and brake power. A four stroke IC engine running at 450rpm has a bore diameter of 100mm and stokes length 120mm. The indicator diagram details are Area of the diagram 4cm, length of the indicator diagram 6.5cm and the spring value of the spring used is 10bar/cm. calculate indicated power of the engine **(Jan 2016) (July 2015)**
11. Discuss the advantages of steam turbines over other prime movers **(july2016)**
12. Draw a neat sketch of a simple impulse water turbine indicating parts. Explain its working. **(july2016)**
13. A 4-cylinder two stroke engine develops 30KW at 2500rpm. Calculate the diameter and stroke of each cylinder if the strike to bore ratio is 1.5. The mean effective pressure on each piston is 6bar and its mechanical efficiency is 80% **(July 2015) (july2016)**

MODULE 3

1. Explain any three machine tool operation. **(Dec 2014) (July 2015)**
2. Explain plane milling, end milling, slot milling, with neat sketch **(Dec 2014)**
3. Classify the robots on the basis of physical configuration. **(Dec 2014)**
4. Explain types of automation with example. **(Dec 2014) (July 2015)**
5. Explain taper turning operation by swiveling the compound rest. **(Dec 2014) (july2016)**
6. Explain NC and CNC machine with simple block diagram **(Dec 2014)**
7. Explain with neat sketches **(Jan 2016)**
 - a. Plain milling
 - b. End milling
 - c. Slot milling
8. Explain the following machining operations on lathe machine with suitable sketches **(Jan 2016)**
 - a. Turning
 - b. Thread cutting
 - c. Knurling
 - d. Facing
9. Write classification of robot configurations and explain Cartesian coordinate with a suitable sketch **(July 2015) (Jan 2016)**
10. Define automation and explain flexible and fixed automation **(Jan 2016)**
11. Differentiate between 1.Drilling and reaming 2.boring and counter boring **(july2016)**
12. Mention the advantages and limitations of automation **(July 2015) (july2016)**
13. Explain the Cartesian co-ordinate configuration and spherical coordinate configuration of robots with neat sketches. **(july2016)**

MODULE4

1. Write down applications of ferrous metals. **(Dec 2014) (July 2015)**
2. Define composites and list its classification. **(Dec 2014) (july2016)**
3. Explain electric arc welding and oxy-acetylene welding with neat sketch. **(Dec 2014)**
4. What is alloy? Write down its application. **(Dec 2014) (July 2015)**
5. Explain applications of composites. **(Dec 2014)**
6. Compare soldering and brazing. **(Dec 2014)**
7. Explain types of ferrous metals. **(Dec 2014) (July 2015)**
8. Write classification of ferrous and non ferrous metals and explain briefly **(Jan 2016)**
9. Write a short note on composites. **(Jan 2016)**
10. Define soldering and explain electric arc welding with a neat sketch **(July 2015) (Jan 2016)**
(Jan 2016)
11. Explain oxy-acetylene welding process with a neat sketch **(july2016)**
12. Mention the application of composite materials in aerospace and automobile industries
(july2016)
13. Explain arc welding process with a neat sketch **(July 2015) (july2016)**
14. List the different types of oxyacetylene flames and state their applications. **(July 2015)**
(july2016)

MODULE 5

1. What are the properties of good refrigerants? **(Dec 2014) (july2016)**
2. Explain with neat sketch Explain working principle of vapour compression refrigeration **(Dec 2014) (July 2015)**
3. Explain the following **(Dec 2014)**
 - a. Refrigerating effect
 - b. Ton of refrigeration
 - c. COP
4. Explain room air conditioner with a neat sketch **(Dec 2014) (july2016)**
5. Explain with a neat sketch vapour absorption process **(Dec 2014)**
6. Define the following **(July 2015) (Jan 2016)**
 - a. Ton of refrigeration
 - b. Refrigerating effect
 - c. Ice making capacity
 - d.COP
7. Explain principle and working of vapour compression refrigeration with a neat sketch **(Jan 2016) (july2016)**
8. List out the properties of a good refrigerant and explain any two **(Jan 2016)**
9. Explain room air conditioner with a neat sketch **(July 2015) (Jan 2016)**
10. Distinguish between refrigeration and Air conditioning **(July 2015) (july2016)**