

V61/T11026/EE/20160720

Time : 3 Hours

Marks : 80

Instructions :

1. All Questions are Compulsory.
 2. Each Sub-question carry 5 marks.
 3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
 4. Question paper of 80 Marks, it will be converted in to your programme structure marks.
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1. Solve any **four** sub-questions.
 - a) Define Calorific Value of fuel and explain the difference between Higher calorific value and Lower calorific value. 5
 - b) How will you classify Solid, Liquid fuels? Name different types of fuels and grade them as natural and Artificial. 5
 - c) Define : 5
 - i) Fuel
 - ii) Flash point
 - iii) Fire point
 - iv) Auto/Self Ignition point
 - v) Combustion temp.
 - d) What are the main properties of fuel? State five properties of liquid fuel. Among Higher Calorific value and Lower Calorific value. Which one should be used for accurate estimation? 5
 - e) What is Dissociation of Fuel? Name five pollutants formed by dissociated fuel. 5
2. Solve any **four** sub-questions.
 - a) What is a Nozzle? State different types of Nozzles and state their uses. 5
 - b) Explain Super saturation of steam through nozzle with suitable sketches. 5
 - c) Specify different Methods of Refrigeration and state various cycles used for refrigeration. 5
 - d) Define : 5
 - i) One ton of refrigeration
 - ii) C.O.P of refrigerator
 - iii) C O P of heat pump.
 - e) State five different uses of Refrigeration. 5

3. Solve any **four** sub-questions.
- a) Draw a sketch working of Cooling tower with fan. 5
 - b) Explain with the working of Cooling tower. 5
 - c) Explain the principle of Reaction turbine. 5
 - d) Draw combined velocity diagram of Parson's reaction turbine. 5
 - e) Explain the classification of turbines. 5
4. Solve any **four** sub-questions.
- a) What is meant by heat exchanger What are different types of heat exchanger, state uses? 5
 - b) Write a note on black body. 5
 - c) Write a short note on Turbines. 5
 - d) Draw Velocity triangles for an impulse turbine. 5
 - e) Describe the advantages of Steam Turbines over Internal Combustion Engines. 5

