

Bachelor of Engineering
Sixth Semester Examination, June-2021
Operation Management [ME-601]
Branch: ME

Time: 3:00 Hrs

Max Marks 70

Note: 1. Attempt any five questions out of eight.
2. All question carry equal marks.

- Q.1 (a) How are biogas classified. Explain them briefly
(b) What are different types of fuel cells?
- Q.2 (a) What is cooling tower? How are cooling classified.
(b) What is hydrograph and unit of hydrograph? What is the limitation to use of unit hydrograph?
- Q.3 (a) How the most economical capacity hydro-electric plant is decided.
(b) What is “Direct energy Conversion system”. Explain in brief the various direct energy conversion system.
- Q.4 (a) What are different types of reactors commonly used in nuclear power plants?
(b) Name the principle types of power plants. Explain one of them.
- Q.5 (a) What is chemical fuel? How chemical fuels are classified, explain it.
(b) Explain boiling water reactor with neat sketch state its limitations.
- Q.6 (a) What do you mean by hybrid energy systems? Discuss various feasible combinations.
(b) Describe with neat sketch MHD convertor.
- Q.7 (a) Write short note on maximum demand and load factor.
(b) Discuss site selection criteria for hydro power stations.
- Q.8 Explain the following terms-
(a) Balancing reservoir (b) Flow and power duration curve.
(c) Spill ways

Bachelor of Engineering
Sixth Semester Examination, June-2021
Power Plant Engineering [ME-602]
Branch- ME

Time: 3:00 Hrs

Max Marks 70

Note: Attempt any five questions. All question carry equal marks.

- Q.1 (a) What are different types of reactors commonly used in nuclear power plants?
(b) Name the principle types of power plants. Explain one of them.
- Q.2 (a) What is cooling tower? How are cooling classified.
(b) What is hydrograph and unit of hydrograph? What is the limitation to use of unit hydrograph?
- Q.3 (a) What is chemical fuel? How chemical fuels are classified, explain.
(b) Explain boiling water reactor with neat sketch state its limitations.
- Q.4 (a) How are biogas classified. Explain them briefly
(b) What are different types of fuel cells?
- Q.5 (a) How the most economical capacity hydro-electric plant is decided.
(b) What is "Direct energy Conversion system". Explain in brief the various direct energy conversion system.
- Q.6 (a) What do you mean by hybrid energy systems? Discuss various feasible combinations.
(b) Describe with neat sketch MHD convertor.
- Q.7 (a) Write short note on maximum demand and load factor.
(b) Discuss side selection criteria for hydro power stations.
- Q.8 Explain the following terms-
(a) Balancing reservoir (b) Spill ways
(c) Flow and power duration curve.

Bachelor of Engineering
Sixth Semester Examination, June-2021
Metal Cutting & CNC [ME-603]
Branch: ME

Time: 3:00 Hrs

Max Marks 70

Note: 1. Attempt any five questions out of eight.
2. All question carry equal marks.

- Q.1 (a) Discuss various Lathe machine operations with neat sketches.
(b) State the effect of Back Rake angle and mention its types.
- Q.2 (a) Explain types of abrasives used in grinding.
(b) What are the advantages, limitations and application of broaching?
- Q.3 (a) Define cutting speed, feed and depth of cut in relation to shaper work.
(b) Explain one method of forming gears in detail.
- Q.4 (a) Explain gear forming, gear shaping and gear shaving.
(b) State the classification of machine tools in detail.
- Q.5 (a) State the thread production methods. Describe anyone in detail.
(b) What do you understand by control systems? State its applications.
- Q.6 (a) Define the term milling. How it is different than grinding.
(b) State classification of drilling machines.
- Q.7 (a) Explain briefly the parts of lathe.
(b) What is sensor? Discuss classification of sensor.
- Q.8 Write short note on
(a) Indexing
(b) Dividing head

Bachelor of Engineering
Sixth Semester Examination, June-2021
IC Engine [ME-604]
Branch: ME

Time: 3:00 Hrs

Max Marks 70

Note: 1. Attempt any five questions out of eight.
2. All question carry equal marks.

- Q.1 (a) What are the advantages, limitations and application of broaching.
(b) Define cutting speed, feed and depth of cut in relation to shaper work.
- Q.2 (a) Define term indicated power, brake power and mechanical efficiency.
(b) How does the flame front propagate? Discuss the factor that affects flame speed.
- Q.3 (a) Compare diesel knock with detonation in SI engine.
(b) What is octane number and cetane number? What is the effect of cetane number on ignition delay?
- Q.4 (a) Explain with neat sketch working of IC engine.
(b) What is detonation and explain any one theory of detonation.
- Q.5 (a) Name at least five variables affecting detonation in SI engines and also name five method of controlling detonation in SI engine.
(b) Compare turbocharging with supercharging.
- Q.6 (a) Compare turbocharging with supercharging.
(b) Describe battery ignition system with the help of neat sketch.
- Q.7 (a) What are the difference between air standard cycles and fuel air cycles? What are the assumptions in fuel air cycle? Explain taking the example of Otto cycle.
(b) State the effect of Back Rake angle and mention its types.
- Q.8 How fuel metering is done in following cases-
(a) SI engine (b) CI engine

Enrollment No.....

Bachelor of Engineering
Sixth Semester Examination, June-2021
Heat and Mass Transfer [ME-605]
Branch-ME

Time: 3:00 Hrs

Max Marks 70

Note: (i) Attempt any five questions out of eight.

(ii) All questions carry equal marks

(iii) Answer should be precise and to the point only.

(iv) Assume suitable data if necessary and state them clearly.

- Q.1 (a) What is meant by Lumped-capacity? Explain?
(b) Define heat exchangers and explain its types?
- Q.2 (a) Define heat exchangers effectiveness and explain its significances.
(b) Explain Nusselt's Theory for the laminar film condensation on vertical plate
- Q.3 (a) Discuss the mechanism of convection heat transfer with the help of neat diagram.
(b) Discuss Planck's law of distribution applicable for a black body reaction.
- Q.4 (a) Differentiate between free and forced convection with the help of suitable examples.
(b) Where extended surfaces are used give suitable examples.
- Q.5 (a) What is Molar diffusion velocity? Define mass transfer fluxes.
(b) What is Finn efficiency? Explain why fins are generally used on gas side in Gas-to-Liquid heat exchangers?
- Q.6 (a) Define thermal diffusivity and thermal resistance.
(b) Describe the mechanism of heat conduction in metals.
- Q.7 (a) What is Pool boiling? How is the force convection boiling different from pool boiling.
(b) What is radiation shield and write short note also.
- Q.8 Define –

- (a) Emissive power
- (c) Toe-in

- (b) Black surface
- (d) Toe-out