

May 2019
B.Tech. (ME) (IV Semester)
Manufacturing Processes (PCC-ME-210/PCC-MAE-208/PCC-AE-208)

Time: 3 hours

Max. Marks: 75

PART A (1.5 marks each)

Q1

- (a) Name any three casting defects caused due to improper ramming of the moulding sand.
- (b) How directional solidification can be achieved in castings?
- (c) What is extrusion process?
- (d) With a neat sketch explain the principle of rolling process.
- (e) What is machinability?
- (f) Draw a neat sketch to show the nomenclature of a single point cutting tool.
- (g) What are the requirements of a good cutting fluid?
- (h) Classify the different gear manufacturing processes.
- (i) Differentiate between soldering and brazing.
- (j) What is polarity in EAW?

PART B

Q2

- (a) Draw a neat sketch to show the main elements of gating system. What are the objectives of it? (5)
- (b) With neat sketches explain the centrifugal casting process. (10)

Q3

- (a) Differentiate between hot and cold working of metals. (5)
- (b) What is meant by powder metallurgy? Briefly explain its main steps. Also give its advantages and disadvantages. (10)

Q4

- (a) Derive the expression for shear angle in terms of chip thickness ratio in orthogonal metal cutting. (5)
- (b) What do you understand by the term 'Tool Life', as applicable to metal cutting? In what terms is it expressed? What are the main factors which influence the tool life? (10)

Q5

- (a) What is rapid prototyping and rapid tooling? (5)
- (b) What is a cutting tool? What are the desirable qualities of a tool material? Also discuss briefly some important cutting tool materials. (10)

Q6

- (a) What is gear shaping? Give its advantages and disadvantages? (5)
- (b) With a neat sketch explain the main parts of a lathe machine. (10)

Q7

- (a) What is welding? Classify the various welding processes. (5)
- (b) What is resistance welding? Explain Seam and Projection resistance welding processes. (10)