

GANPAT UNIVERSITY

B. Tech. Semester: VI (MC) Engineering
Regular Examination April – June 2016
2MC601 Metal Forming & Fabrication

Time: 3 Hours

Total Marks: 70

- Instructions:** 1. Attempt all questions.
 2. Assume suitable data if necessary.
 3. Figures to the right indicate full marks.
 4. Draw the figure where it required.

Section - I

- Que. – 1** (a) Enlist with assumptions required in analysis of rolling process and also derive the formula for the roll bite angle. 12
- (b) Differentiate between direct and indirect extrusion.
- (c) Define and classify extrusion process. Also state the applications of extrusion process.

OR

- Que. – 1** (a) Write a short note on “Impact Extrusion” with a neat sketch. 12
- (b) Define following terms with applications.
 (i) Bloom (ii) Slab (iii) Billet (iv) Plate
- (c) Enlist various types of rolling mills and explain in detail with neat sketch cluster rolling mill.

- Que. – 2** (a) Define and draw neat sketch of following operations: 11
 (i) Cogging (ii) Fullering (iii) Edging (iv) Up setting (v) Bending
- (b) Explain coining and embossing processes with neat sketch.

OR

- Que. – 2** (a) Define and draw neat sketch of following operations: 11
 (i) Blanking (ii) Punching (iii) Notching (iv) Slotting (v) Perforating
- (b) List the various types of forging hammers. With neat sketch explain the operation of gravity drop hammer and power drop hammer with advantages, limitations and applications.

- Que. – 3** Attempt any three. 12
- (a) Explain with neat sketch cold-work-anneal cycle.
- (b) Write a short note on “Wire drawing”.
- (c) Explain with neat sketch blow moulding process.
- (d) Write a short note on “Combination Die”.

Section – II

- Que. – 4 (a) What is basic principle of resistance welding? Classify resistance welding and also write their advantages, limitations and applications. 12
- (b) Explain the operation of thermit welding process with advantages, limitations and applications.
- (c) List various types of welding defects. Also discuss their causes and remedies.

OR

- Que. – 4 (a) Explain the operation of upset and flash butt resistance welding with suitable example. 12
- (b) Differentiate between soldering, brazing and welding processes.
- (c) What is the principle of solid state welding? Explain the operation of friction welding process with neat sketch.

- Que. – 5 (a) Differentiate between forehand and backhand welding techniques. 11
- (b) Enlist various shielding gases use in arc welding.
- (c) Define and discuss following terms with their importance in welding.
(i) Edge preparation (ii) Filler metal

OR

- Que. – 5 (a) Give the answer of following questions for oxy acetylene welding process. 11
- (i) How to store acetylene gas in cylinder? Why?
- (ii) How to heat is produces in oxy- acetylene welding?
- (b) Differentiate between constant current (CC) and constant voltage (CV) static characteristics.
- (c) Define following terms of arc welding:
(i) Duty cycle (ii) OCV (iii) Arc length

- Que. – 6 Write short note on following: (Any three) 12

- (a) FCAW process
- (b) Ultrasonic welding
- (c) SAW process
- (d) Mode of Metal transfer use in MIG welding process.

END OF PAPER