

**GANPAT UNIVERSITY**  
**B.Tech Sem.VI Mechanical Engineering**  
**Regular Examination May- June 2014**  
**2ME602- Metal Forming & Fabrication Technology**

Time:- 3 Hour

Total Marks:- 70

**INSTRUCTION:-**

- i. Answer to the two sections must be written in separate answer books.
- ii. Figures to the right indicate full marks of the questions.
- iii. Draw neat sketch wherever necessary.
- iv. Assume suitable data if necessary.

**Section - I**

**Q.1 Answer the following:** [12]

- [A] Give a brief classification of the various fabrication processes.  
 [B] What do you mean by Heat Balance? Explain its relevance.  
 [C] Describe the types of flames obtained in an oxy-acetylene gas welding process giving their applications with neat sketch.

OR

**Q.1 Answer the following:** [12]

- [A] Differentiate between straight polarity and reverse polarity.  
 [B] Describe the Gas metal arc welding (GMAW) process in detail with neat sketch.  
 [C] Explain the following term:  
 1. Weldability  
 2. Duty cycle  
 3. Tack weld  
 4. HAZ

**Q.2 Answer the following:** [11]

- [A] Describe the electron beam welding process with neat sketch. 4  
 [B] Describe the various types of edge preparation carried out in welding processes. 3  
 [C] Explain resistance spot welding with neat sketch. 4

OR

**Q.2 Answer the following:** [11]

- [A] Describe the plasma arc welding process with neat sketch. 4  
 [B] Explain the effect of following parameters on welding:  
 1. Travelling speed 2. Arc length 3. Welding current 3  
 [C] Compare welding, brazing and soldering. 4

**Q.3 Attempt any three.** [12]

- [A] Write a short note on electroslog welding.  
 [B] What is flux? Why is it essential to use in some welding situations.  
 [C] Explain the explosion welding process with neat sketch.  
 [D] Describe the major forms of distortions likely to occur during welding.

## Section - II

- Q.4 Answer the following:** [12]
- [A] Explain phenomenon of work hardening in a ductile metal with the help of a stress-strain diagram. What is the effect of strain hardening on the properties of deformed metal?
- [B] Explain the following terminology and state its applications.  
Ingot, Bloom, Plate and Foil
- [C] Enlist the defects which occur in metal rolling.
- OR
- Q.4 Answer the following:** [12]
- [A] How forming processes are differing with casting and machining processes? Give detail classification of forming processes.
- [B] What do you mean by front and back tensions to sheet metals during rolling?
- [C] Explain the mechanical press in detail.
- Q.5 Answer the following:** [11]
- [A] Define specific roll pressure. What are the assumptions made in the rolling load calculation? 4
- [B] Define the following term with neat sketch. 3  
1. Blanking 2. Lancing 3. Notching
- [C] Explain the difference between open die and close die forging. 4
- OR
- Q.5 Answer the following:** [11]
- [A] Explain gravity drop and power drop hammer. 4
- [B] What is the role of dummy block in extrusion process? 3
- [C] Explain causes and remedies of various extrusion defects. 4
- Q.6 Attempt any three.** [12]
- [A] Differentiate between embossing and coining.
- [B] Write a short note on injection molding process.
- [C] Write a short note roll pass sequences in metal rolling process.
- [D] What is the difference between extrusion and drawing?

END OF PAPER