Student Exam No: _____

GANPAT UNIVERSITY

B.TECH SEM. VI - MECHATRONICS ENGINEERING

CBCS REGULAR EXAMINATION MAY/JUNE-2014

2MC601 METAL FORMING & FABRICATION

Time: 3 Hours **Total Marks: 70**

Instructions:

1) All questions are **compulsory**.
2) Figures to the **right** indicate full marks.
3) Answers to the two sections must be written in **separate** answer books.

SECTION – I

Que:-1 **Answer the following questions.**

(A) State and explain the defects in the metal rolled parts. [04]
(B) Differentiate between direct and indirect extrusion. [04]
(C) Write a short note on "Impact Extrusion" with a neat sketch. [04]

OR

Que:-1 **Answer the following questions.**

(A) Define extrusion and classify them. Also state the application of extrusion. [04]
(B) Enlist various types of rolling mills and explain the tandem rolling mill with neat sketch. [04]
(C) Short note on roll pass sequence. [04]

Que:-2 **Answer the following questions.**

(A) Define forgeability and explain how forgeability is to be evaluated? [03]
(B) Explain coining and embossing processes with neat sketch. [04]
(C) Give a short note on Progressive Die. [04]

OR

Que:-2 **Answer the following questions.**

(A) Explain the following operation with a neat sketch. [03]
1. Blanking 2. Punching 3. Piercing
(B) Enlist the various types of forging hammers and explain gravity drop hammers with neat sketch. [04]
(C) Explain with neat sketch the following operation. [04]
1. Fullering 2. Edging

Que:-3 **Attempt any three.** [12]

(A) Explain with neat sketch cold-work-anneal cycle.
(B) Give a short note on wire drawing.
(C) Explain with neat sketch injection moulding.
(D) How do you compare forged components with cast components?

SECTION – II

Que:-4 **Answer the following questions.**

(A) Describe the types of flame obtained in Oxy-Acetylene gas welding with neat sketch. [06]

(B) Enlist and discuss the types of welding joint by American Welding Society with neat sketch. [06]

OR

Que:-4 **Answer the following questions.**

(A) Explain electron beam welding process and state its advantages and limitations. [06]

(B) What is welding defect? Explain overlap, porosity and misalignment defect with its causes and remedies. [06]

Que:-5 **Answer the following questions.**

(A) Explain with neat sketch resistance spot welding process along with advantages and limitations. [06]

(B) What is the importance of shielding gas in welding process? Enlist the welding process in which shielding gas is used and why? [05]

OR

Que:-5 **Answer the following questions.**

(A) Discuss the principle of operation of GMAW process. Also write the advantages and disadvantages. [06]

(B) What is the importance of flux in welding process? Enlist the welding process in which flux is used and why? [05]

Que:-6 **Attempt any two.** [12]

(A) Enlist brazing processes and explain any three types of brazing process.

(B) What arc the requirements of an electric arc welding power source? Write a short note on power sources used in Arc welding Process with neat sketch.

(C) Explain Thermite welding process with neat sketch.

END OF PAPER