

END TERM EXAMINATION

FIRST SEMESTER (B.TECH) JANUARY-2024

Paper Code: ETME-105

Subject: Manufacturing Processes

Time: 3 Hours

Maximum Marks :75

Note: Attempt five questions in all including question no.1 which is compulsory. Select one question from each unit. Assume suitable missing data.

Q1. Answer questions

(2.5x10=25)

- (a) Define Stiffness, Toughness and Resilience.
- (b) What type of shrinkage does the riser take care off? Explain.
- (c) Mention the composition of Mild steel.
- (d) What do you understand by 'Mechanical Working' and 'Plastic Flow' of a material?
- (e) Explain the threading operation used in Fitting.
- (f) Classify different type of Welding processes used in industry.
- (g) List any 4 important functions of flux used in fusion welding.
- (h) Which type of flame would you suggest for welding of Copper and Aluminum?
- (i) What are the different methods of producing metal powders?
- (j) Name any 6 tools used in Sheet Metal shop.

UNIT-I

- Q2. (a) Summarize the important reactions occurring in different zones of Cupola furnace with the help of a neat sketch. (6.5)
(b) How carbon steels are classified on the basis of carbon percentage? List at least one application for each type. (6)

- Q3. (a) What is the difference between Mould and Pattern? Discuss any 4 types of pattern. (6.5)
(b) Explain the important steps in production of Lost Wax Casting with a neat sketch. (6)

UNIT -II

- Q4. (a) How are files classified? Explain. (6.5)
(b) How does Hot extrusion differ from Cold extrusion? Discuss their relative merits and demerits (6)
- Q5. (a) Explain various operations performed in Fitting shop with neat sketches. (6.5)
(b) Why are forgings sometimes heat treated? What main considerations will you follow in designing a forging? <https://www.ggsipuonline.com> (6)

UNIT -III

- Q6. (a) What is the difference between an Arc and a Spark? Explain the working of Submerged Arc Welding with a neat sketch. (6.5)
(b) List the common welding defects along with their causes and remedies. (6)
- Q7. (a) What is the role of polarity in Welding? Explain the principle of Atomic Hydrogen Welding with a neat sketch. (6.5)
(b) What is the governing equation for Resistance Welding? How is spot welding different from seam welding? (6)

UNIT IV

- Q8. (a) List the different types of sheet metal operations and explain any 3 in detail. (6.5)
(b) What is Powder Metallurgy? Explain the various secondary finishing operations used in Powder Metallurgy? (6)
- Q9. (a) Describe the process of wire drawing and deep drawing with neat sketches. (6.5)
(b) What are the main stages of Powder Metallurgy process? Explain the Atomization process in detail. (6)
