

## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech II Year II Semester Examinations, December - 2019

## MANUFACTURING PROCESS

(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b as sub questions.

## PART - A

(25 Marks)

- 1.a) List out any four types of patterns. [2]
- b) What are the desirable properties of moulding sand? [3]
- c) What are the types of flames used in oxy fuel welding? [2]
- d) List any three advantages of gas welding over arc welding. [3]
- e) Write any two differences between soldering and Brazing. [2]
- f) What are the causes and remedies of welding process: i) Spatter ii) Hot inclusions. [3]
- g) Define hot working. [2]
- h) Sketch the following: i) Planetary rolling mill ii) Cluster Rolling mill. [3]
- i) State the principle of extrusion and list the types of extrusion. [2]
- j) List out the common forging defects. [3]

## PART - B

(50 Marks)

2. Describe the process of centrifugal casting with neat sketch. What are the advantages? [10]
- OR
3. List out the defects in casting process. Explain any five with neat sketch. [10]
  4. Explain the process of submerged arc welding with neat sketch. What are its advantages? [10]
- OR
5. Explain the process of thermit welding with neat sketch. Write its applications. [10]
  6. Discuss various welding defects with cause and remedies. [10]
- OR
7. What are the reasons and effects of Heat affected zone in welding? [10]
  8. Why recovery, recrystallization and grain growth are required after plastic deformation of a metal. Explain these process. [10]
- OR
9. Derive the expression for roll separating force and power in rolling. [10]
- 10.a) Write a shot notes on i) Wire drawing and ii) Tube drawing.
  - b) What are the advantages and limitations of extrusion process? [5+5]
- OR
- 11.a) Briefly explain hydrostatic extrusion process with neat sketch.
  - b) List out the different forging operations. Explain drop forging operation with neat sketch. [5+5]