

R16

Code No: 134BK

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech II Year II Semester Examinations, April - 2018

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, c as sub questions.

**PART-A**

(25 Marks)

- 1.a) What is the difference between pattern and casting? [2]
- b) What are the advantages of casting process and mention its applications. [3]
- c) What is the difference between DC and AC arc welding? [2]
- d) What is filler metal? Explain its importance in welding. [3]
- e) How is brazing different from welding? [2]
- f) Explain the heat affected zones in welding. [3]
- g) Suggest the presses used for coining operations. [2]
- h) What are the specific merits of cold working over hot working? [3]
- i) What are the advantages of extrusion process? [2]
- j) What are the forging defects? [3]

**PART-B**

(50 Marks)

- 2.a) Differentiate between pressurized and unpressurised gating systems with reference to the applications.
  - b) What do you understand by centrifugal casting? How are the centrifugal casting methods classified? [5+5]
- OR**
- 3.a) What purpose is served by the risers in sand casting? Explain the principles of design of risers.
  - b) What are the advantages, limitation and applications of investment casting? [5+5]
- 4.a) Describe the oxy-acetylene gas welding technique and give the applications.
  - b) Explain the resistance welding process giving the equipment, parameters controlled and its advantages. [5+5]
- OR**
- 5.a) What are the kinds of joints that are normally employed for welding processes? Give their sketches.
  - b) Explain submerged arc welding process and its applications. [5+5]

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- 6.a) What are differences between TIG and MIG welding processes?  
b) Write a short note on laser beam welding, detailing the applications. [5+5]

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**OR**  
7.a) What is friction welding? What are its applications?  
b) Explain about welding defects and destructive and non destructive testing of welds. [5+5]

- 8.a) What are the main characteristics of hot working as compared with cold working process?

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- b) Explain about hot spinning and cold spinning applications.  
9.a) Briefly explain various methods available for breakdown passes in rolling. Explain their applications.

- b) Distinguish between bending and drawing in sheet-metal operations. [5+5]

- 10.a) Explain forward extrusion and backward extrusion with neat sketches.

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- b) Differentiate between roll forging and rotary forging.

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**OR**  
11.a) Differentiate hot extrusion and cold extrusion processes.

- b) Sketch and explain forging hammers. What are the advantages of cold forging? [5+5]

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