

Roll No.

Total No. of Questions : 09]

[Total No. of Pages : 02

B.Tech. (Sem. - 3rd)
MANUFACTURING PROCESS - I

SUBJECT CODE : PE - 209

Paper ID : [A0806]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1)

(10 × 2 = 20)

- a) Give the moulding sand composition for green sand moulds.
- b) Enumerate various types of sands used in casting practices.
- c) Give the reasons for providing the riser in casting design.
- d) Explain the directional solidification process in castings.
- e) Why cleaning of castings is required?
- f) What are the process parameters involved in spot welding process?
- g) Does seam resistance welding process provide leak proof joint? Explain.
- h) How welding electrode can be classified?
- i) What is arc blow? How it can be prevented?
- j) Differentiate between brazing and braze welding.

Section - B

(4 × 5 = 20)

- Q2) Describe various types of patterns used in sand casting practice giving neat sketches.
- Q3) Describe the reasons and remedies for following casting defects :
 - (a) Blow Holes.
 - (b) Cold shut.
 - (c) Misalignment.

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- Q4) Briefly describe various welding positions deployed in welding processes giving their applications and sketches.
- Q5) Briefly describe the concept of thermal effects on weldment and heat affected zone. How does HAZ affect component performance?
- Q6) Briefly discuss the working of TIG welding process giving its process details, applications and process parameters involved therein.

Section - C

(2 × 10 = 20)

- Q7) Briefly discuss the working of cupola giving a neat sketch. Discuss various zones of cupola explaining the reactions in each of these zones.
- Q8) (a) Briefly describe four welding defects, their causes and the remedies.
(b) Write short note on working of submerged arc welding giving neat sketch and its applications.
- Q9) Write short notes on any two of the following giving neat sketches :
- (a) Vacuum casting.
(b) Metallurgical considerations in castings.
(c) Electron beam Welding.
(d) Thermit welding.
