

Roll No. ....

Total No. of Questions : 09]

[Total No. of Pages : 02

**B.Tech. (Sem. - 3<sup>rd</sup>)**  
**MANUFACTURING PROCESSES - 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 x 2 = 20)**

- a) Define pattern.
- b) What do you understand by term allowances?
- c) Differentiate between soldering and brazing.
- d) How selection of electrodes is done?
- e) Define arc stability.
- f) What are risers and what are their functions?
- g) What do you understand by directional solidification?
- h) What is core baking?
- i) What do you understand by arc blow?
- j) What are various materials for patterns?

**Section - B**

(4 x 5 = 20)

- Q2) What are various moulding sand compositions and what are moulding sand properties?
- Q3) What is the principle of gas welding and what are various types of flames?
- Q4) What is the principle of resistance welding? Explain spot welding technique.
- Q5) What are moulding machines? What are various types of cores and core sands used?
- Q6) Explain with help of neat sketch the working of electron beam welding and also mention its process parameters and give its applications.

**Section - C**

(2 x 10 = 20)

- Q7) What is the principle of electric arc welding and also explain welding arc and its characteristics.
- Q8) What are the various types of furnaces used in casting? Explain cupola and its operation.
- Q9) Write short notes on any two :
- (a) Cleaning and finishing of castings.
  - (b) Filler metals in welding.
  - (c) Thermal effects on weldment.

