

Total No. of Questions : 8]

SEAT No. :

PA-1310

[Total No. of Pages : 2

[5925]-343

S.E. (Robotics & Automation)

MANUFACTURING TECHNOLOGY

(2019 Pattern) (Semester - III) (211502)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Figures to the right side indicate full marks.
- 3) Neat diagrams must be drawn wherever necessary.
- 4) Assume Suitable data if necessary.
- 5) Use of Logarithmic Table, Slide rule is Electronic pocket calculator is allowed.

Q1) a) Explain with neat sketch tube drawing process. [9]

b) Explain extrusion operation with its schematic diagram. [8]

OR

Q2) a) Explain various die materials and their properties for wire drawing process. [9]

b) With neat sketch, differentiate between direct and indirect extrusion process. [8]

Q3) a) Explain with neat sketch Shielded Metal Arc Welding (SMAW) process? [9]

b) Explain with neat sketch Gas Tungsten Arc Welding (GTAW) with water cooled torch? [8]

OR

Q4) a) Explain the application of Alternating Current (AC), Direct Current Straight Polarity (DCSP) and Direct Current Reverse Polarity (DCRP) in Shielded Metal Arc Welding (SMAW) process. [9]

b) How the heat balance is achieved in spot welding, explain the spot welding process? [8]

P.T.O.

**Q5) a)** Explain with neat diagram construction and working of Abrasive Jet Machining (AJM) process. [9]

b) Draw schematic diagram of Water Jet Machining (WJM). Explain its construction and working. [9]

OR

**Q6) a)** Explain with neat sketch Electron Beam Machining (EBM) process. [9]

b) Explain with neat sketch Electro Chemical Machining (ECM) process. [9]

**Q7) a)** Explain the application of robot in welding process. [9]

b) Explain the application of robot in material handling application. [9]

OR

**Q8) a)** Explain spray painting robots and its advantages. [9]

b) Explain forging robots and press working robot. [9]

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