Total No. of Questions : 8]

SEAT No. :

P-9192

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[6179]-324

S.E. (Automobile & Mechanical/Automation & Robotics)

MANUFACTURING PROCESSES

(2019 Pattern) (Semester - IV) (202050)

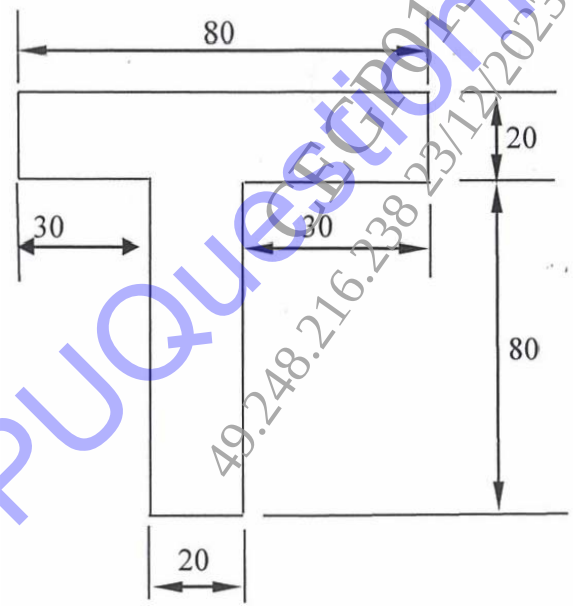
Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates :

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***Assume Suitable data if necessary and mention it clearly.***
4) ***All questions are compulsory i.e. Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.***

Q1) a) Compare Compound Die and Progressive dies with neat sketch. **[8]**

b) Find center of pressure of the component as shown in fig. **[10]**



All dimensions are in mm.

OR

Q2) a) Explain following press-working operations with neat sketch. **[8]**

i) Punching,

ii) Blanking,

iii) Lancing,

iv) Perforating

P.T.O.

b) A Washer with a 12.7 mm internal hole and 25.4 mm outside diameter is to be made from a MS strip of 1.5 mm thickness. Considering elastic recovery of the material, find **[10]**

i) Clearance

ii) Blanking die opening size

iii) Blanking punch size

iv) Piercing punch size

v) Piercing die opening size. Assume clearance to be 5% of the stock thickness.

Q3) a) Differentiate between Brazing and soldering. **[5]**

b) With neat sketches state the characteristics of gas welding flames. **[6]**

c) Explain Gas Tungsten Arc welding (GTAW) with neat sketch. **[6]**

OR

Q4) a) Classify welding processes according to source of heat generation. **[5]**

b) Explain Single carbon arc Welding with neat sketch. **[6]**

c) Explain Metal Inert Gas Welding process with neat sketch. **[6]**

Q5) a) State any two applications of each of the following processes : **[6]**

i) Transfer Molding,

ii) Injection Molding,

iii) Thermoforming process

b) What are some of the attractive properties of plastics over metals? What are some of the major limitations of plastics over metals? **[6]**

c) Compare between Thermosetting and Thermoplastic. **[6]**

OR

Q6) a) Explain extrusion process for thermoplastic plastics. **[6]**

b) Explain blow molding with suitable sketch. **[6]**

c) Describe screw type injection moulding with neat sketch. **[6]**

Q7) a) What are composites? State its advantages, limitations and applications. **[6]**

b) Classify composite materials and discuss applications of each type. **[5]**

c) Differentiate between spray layup and hand lay up for composite process. **[6]**

OR

Q8) a) Differentiate between ceramic matrix and metal matrix composite. **[6]**

b) Write a short note on- polymer matrix composites (PMC). **[5]**

c) Explain hand lay-up process of composite manufacturing. **[6]**

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