BE/Sem VII/CBSGS/AUTO/MJ2019/13-05-2019

(3 Hours) Max. Marks: 80

Note:
1. **Question 1 is Compulsory**
2. Solve any three from remaining five
3. Figures to right indicate full marks
4. Assume suitable data if necessary

Q.1 a) Explain an algorithm for hidden surface removal 5
b) Explain reflection with respect to 3D transformation 5
c) Explain the significance of rapid prototyping in product development
and testing 5
d) Explain the roughing and finishing canned cycle for turning. 5

Q.2 a) Plot the beizer curve having end points P_0 (1, 1) and P_3 (3, 1). The other
control points are P_1 (2, 1) and P_2 (4, 3). Also find the midpoint of the
curve. 10

b) Explain Fused Deposition Modelling 10

Q.3 a) Write a complete part program to machine the external contour for the
component shown. 10

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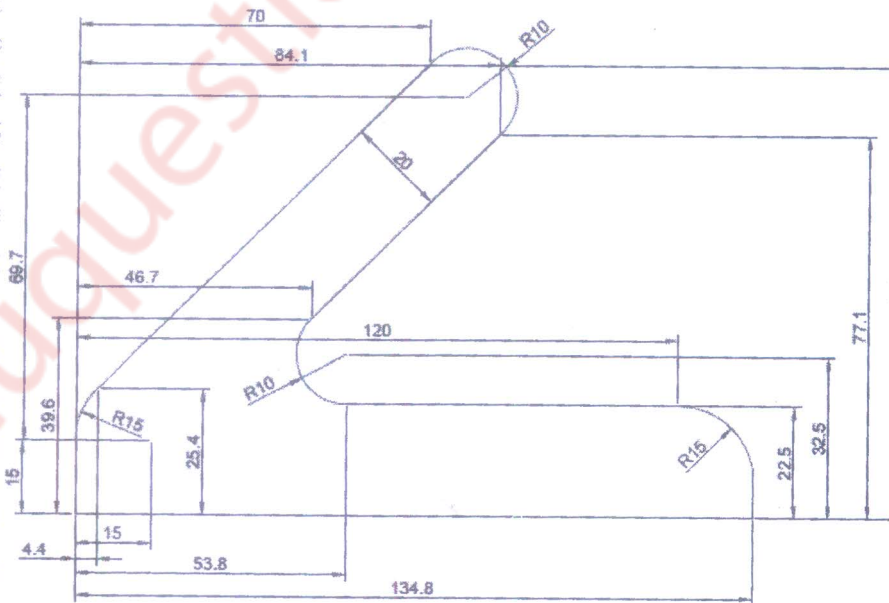
b) Explain Adaptive control system by explaining ACC and ACO   10

Q.4   a) A rectangle ABC has vertices A (5, 10), B (20, 10) and C (20, 20). This   10
triangle is to be reflected about a line P (25, 20) and Q (10, 30).
Determine the new triangle position.

b) Explain the procedure of kinematic analysis of a structural system with   10
an example.

Q.5   a) Write a part program in APT for the component shown in Fig using end   10
mill cutter of 20mm diameter. Clearly show the axes system chosen with
a sketch and the direction of the cutter for the motion statements.
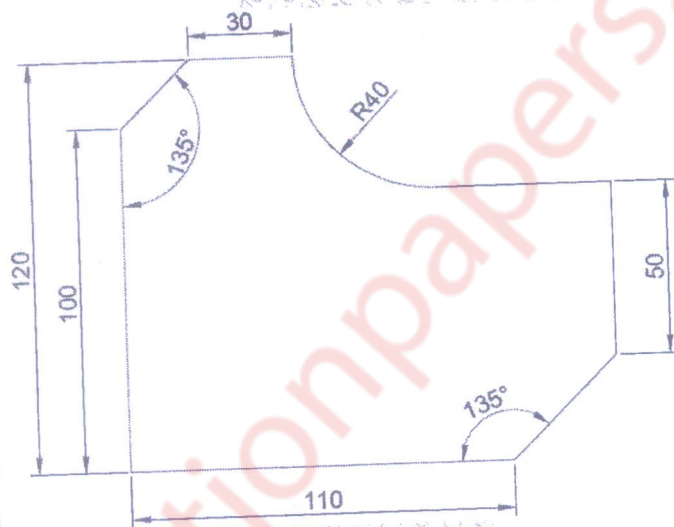
b) Explain the basic components of CIM system.   10

Q.6   Write short note on any **Four**:   20
a) Benefits of AI
b) Constructive solid geometry and Boundary representation
c) Feedback Devices
d) Advantages of Computer aided part programming as compared to
manual part programming
e) Photolithography

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