BE Sem VII / Auto / Second half 2018 / CBGS

L + 11/2018

(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

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Q.1	a)	Explain Cohen-Sutherland Line clipping algorithm.	5
	b)	Explain the roughing and finishing canned cycle for turning.	5
	c)	Explain rotation with respect to 3D transformation.	5
	d)	Explain the significance of rapid prototyping.	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 Feature based Modeling **10**

Q.3 a) Describe the transformation M_K of a object about a link K which makes an angle ϕ with x-axis. It has slope m and y intercept as (0, C) with y-axis as shown in Figure. **10**
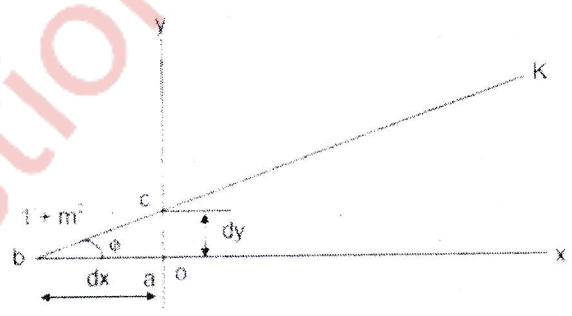
a) Explain Direct Numerical Control(DNC) **10**

Q.4 a) What is the need for concatenation of transformation? Explain with example why the homogeneous coordinate system is generally used in graphics, in particular for software implementation. **10**

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

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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.
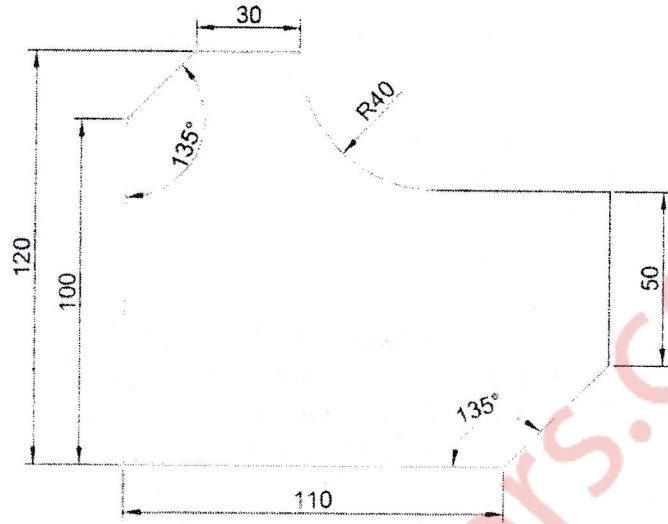
     b) Socio-Techno-Economic aspects of CIM.   **10**

Q.6   Write short note on any **Four**:   **20**
   a) Use of CAE in Engineering Analysis.
   b) Constructive solid geometry and Boundary representation
   c) Automated Storage/Retrieval System(AS/RS)
   d) 3D Printing
   e) APT statements

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