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Code No. : 16501 AS O

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (Mech. Engg.) III Year II-Semester Advanced Supplementary Examinations, July-2019

CAD/CAM

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE questions from Part-B

Part-A (10 × 2 = 20 Marks)

1. List the properties of a spline.
2. What are the NURBS?
3. What is the use of planar surface?
4. Write the transformation matrix for reflection.
5. Differentiate point to point and paraxial motion.
6. Write any four motion commands.
7. What is the structure of SINUMERIC controller?
8. Explain the terms work volume, Precession and repeatability in robots.
9. What is part family?
10. What is CAD/CAM Integration?

Part-B (5 × 10 = 50 Marks)

11. a) Express the helix curve in parametric and non parametric form. [4]
b) Compose a Bezier curve with 4 polygon vertices, $P_1(1,1)$, $P_2(3,5)$, $P_3(5,5)$ and $P_4(6,1)$. [6]
12. a) Describe C-rep and B-rep approach for modeling of a connecting rod. [6]
b) Explain the bi cubic surface modeling approach. [4]
13. a) Describe post processor, NC coordinate system and cutter radius compensation with neat sketches. [6]
b) Write a CNC program with G and M codes for a simple milling operation. [4]
14. a) Describe adaptive control system in DNC. [5]
b) Write robot programming and controls. [5]
15. a) What is GT lay out? Describe MICLASSCODE system. [6]
b) Discuss the elements in FMS. [4]
16. a) Describe the continuity and the properties of a B-spline curves. [5]
b) A triangle ABC, with coordinates $A(1,1)$, $B(3,5)$ and $C(4,2)$ is rotated by 30° about point B then find the new coordinates of the triangle. [5]
17. Answer any *two* of the following:
 - a) What are the controls used in NC system? Explain. [5]
 - b) Explain various elements in CNC system. [5]
 - c) Describe in detail computer aided process planning methods. [5]

