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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Sixth Semester, B.E. - Mechanical Engineering

Semester End Examination; June/July - 2015

CAD/CAM

Time: 3 hrs

Max. Marks: 100

Note: Answer any *FIVE* full questions, selecting at least *TWO* full questions from *each part*.

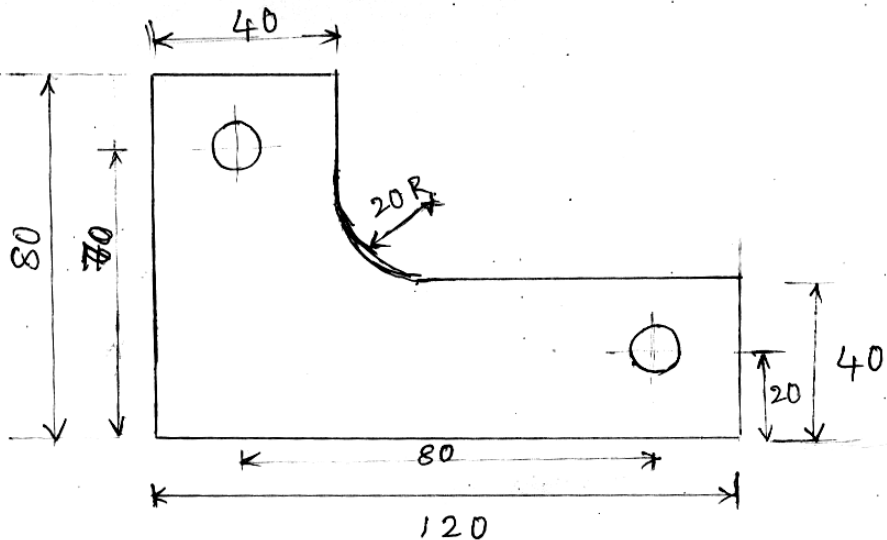
PART - A

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| 1. a. Define CAM. Explain the role of computers in manufacturing. | 8 |
| b. With the help of a block diagram. Explain how CAD / CAM is overlaid virtually on all activities of the product cycle. | 8 |
| c. Justify how drawings are more understandable in CAD. | 4 |
| 2 a. List the differences between DBR and DVST type of CRT displays. | 6 |
| b. Write a note on digitizers. | 6 |
| c. Explain ; i) Pen plotters | 8 |
| ii) Flat bed plotters. | |
| 3 a. What are the rules to be considered in designing graphics software? | 4 |
| b. Explain the functions of a graphics package. | 8 |
| c. Compare between B – rep and C – rep approaches with the help of sketches. | 8 |
| 4 a. Briefly explain IGES and DXF files. | 10 |
| b. Describe Bezier curve, B – splines and cubic B – splines surfaces. | 10 |

PART - B

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| 5 a. Explain the steps to be accomplished to utilize NC in manufacturing. | 10 |
| b. Sketch the NC machine tool axis system for | |
| i) Milling and drilling operations | 4 |
| ii) Turning operation. | |
| c. List the advantages of NC. | 6 |
| 6 a. With the help of a Block diagram, explain hybrid CNC and straight CNC. | 10 |
| b. Sketch and explain Twin turret turning centres and multiple spindle turning centres. | 10 |
| 7 a. Explain the ISO coding system for turning inserts and tool holders. | 8 |
| b. Explain the tool changing procedure in care of a double gripper tool arm with simple sketches. | 12 |
| 8 a. Explain the following with script to CNC programming : | |
| i) Modal functions | |
| ii) Word address format | 12 |
| iii) Canned cycles | |
| iv) CAPP. | |

b. Write a manual part program for the part shown in figure. Use absolute point outting system and word address format. Assume thickness of the part = 20 mm and cutter diameter 20 mm. Other missing data may be suitable assumed.



Holes are of 20 mm ϕ . All dimensions are in millimeter.

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