Total No. of Printed Pages:2

SUBJECT CODE NO: H-194
FACULTY OF SCIENCE AND TECHNOLOGY
T.E. (Mechanical)
CAD/CAM/CAE
(OLD)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
i) Answer any three questions from each section.
ii) Figures to the right indicate full marks.
iii) Assume suitable data whenever necessary and state it clearly.
iv) Draw neat sketches wherever necessary.

Section A

Q.1 a) Define the term CAD, and list down applications of CAD in manufacturing & explain any one in detail. 06

b) Explain the generalised product lifecycle with the help of neat sketches, explaining the use of computers in it. 07

Q.2 a) Explain the functions to be performed by graphic software package. 06

b) Discuss modern solid modelling techniques along with its advantages & disadvantages. 07

Q.3 A rectangle is defined in 2D-Space by its vertices as A(2,2), B(8,2), C(8,4) & D(4,2). Express them in matrix notation and perform the following transformation and show it graphically on graph paper. 13

i) Rotation in anticlockwise direction through an angle 90^o about its centroid.
ii) Scaling the original Rectangle by 0.5units in X direction and 2 units in Y direction about the origin.

Q.4 a. Explain the characteristics of Beizer curves. 06

b. Explain different mating conditions used in the assembly modelling. 07

Q.5 Write short notes on followings.(any three) 14

a) Manufacturing data base & CAD/CAM
b) B– Spline curve
c) Solid representation techniques
d) CIM
e) Data input devices used in CAD

Section B

Q.6 a. Define different types of automation also state its advantages and limitations. 06

b. What is group Technology? Distinguish between hierarchal & attribute type of coding system. 07

Q.7 a. Explain the basic components of CNC and DNC system. 06

b. What is cutter tool compensation? Explain it with reference to CNC-Programming. 07

Q.8 a. Explain different physical configuration of robots with neat diagram. 06

b. Enlist the applications of finite element analysis software & explain any one in detail. 07

Q.9 Write a manual part program for machining a cast iron work piece to achieve the dimensions as shown in figure below. Assume the thickness of work piece as 10mm. 13

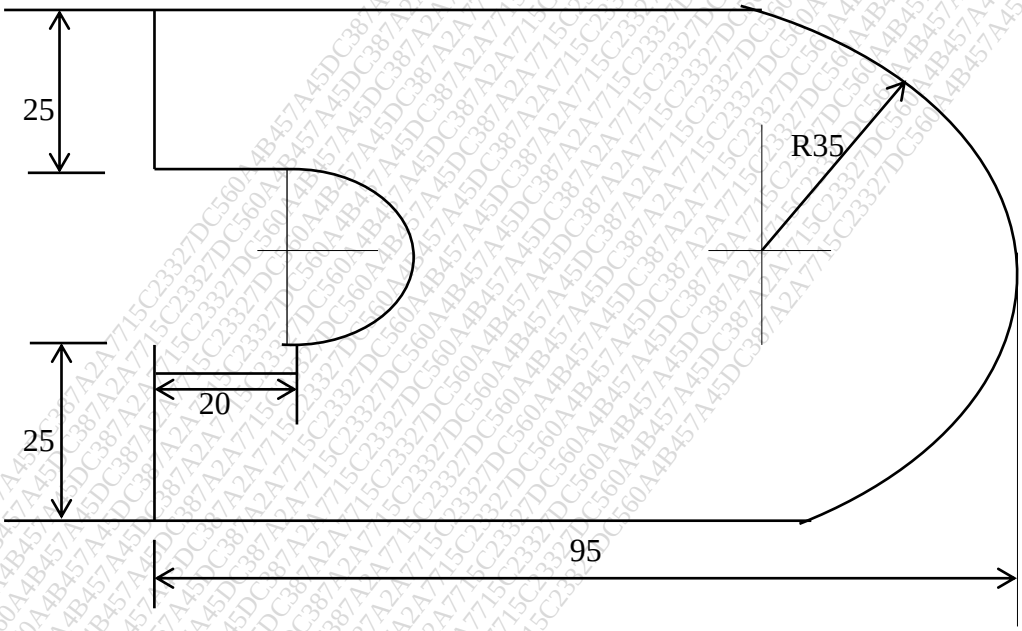

Figure 1

Q.10 Write short notes on (any two) 14

a. C.A.P.P

b. Drives for N.C./C.N.C. machines

c. End effectors used in robots