

KATHMANDU UNIVERSITY  
End Semester Examination  
May/June, 2022

Marks Scored:

Level : B.E.

Course : MEEG 317

Year : III

Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date :

SECTION "A"

[20Q.  $\times$  0.5 = 10 marks]

Encircle the most appropriate answer.

- Which of the following is the function of the ejection system in injection molding?
  - Move polymer melt into the mold cavity
  - Open the mold halves after the cavity is filled
  - Separate the part from the mold cavity after molding
  - Remove the molded parts from the runner system after molding
- Stretch blow molding is a variation of \_\_\_\_\_.
  - Extrusion blow molding
  - Injection blow molding
  - Rotational blow molding
  - Compression blow
- A thermoforming mold with convex form is called a \_\_\_\_\_.
  - die
  - negative mold
  - positive mold
  - three plate mold
- Polystyrene is a light, transparent, thermoplastic material used for making \_\_\_\_\_.
  - Packaging bags
  - Toys and combs
  - Electrical insulation
  - Non-sticking utensils
- How long does it take for a plastic bag to decompose?
  - Up to 5 days
  - Up to 5 years
  - Up to 1000 years
  - Never
- Which will produce toxic hydrogen chloride gas on plastic burning?
  - LDPE
  - PVC
  - HDPE
  - PET
- Which of the following process is **NOT** used to produce plastic sheet and film?
  - Blown-film extrusion process
  - Chill-roll extrusion
  - Spinning
  - Calendering
- A Bezier curve is a polynomial of degree \_\_\_\_\_ the number of control points used.
  - equal to
  - one less than
  - two less than
  - two more than
- Which of the following is **NOT** associated with the properties of Bezier Curves?
  - It passes through first and last points.
  - Variation diminishing properties
  - Axis independent properties
  - Independent control properties
- NC counteracting is an example of
  - continuous path positioning
  - absolute positioning
  - continuous path positioning
  - incremental positioning



KATHMANDU UNIVERSITY  
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May/June, 2022

Level : B.E.  
Year : III  
Time : 2 hrs. 30 mins.

Course : MEEG 317  
Semester : II  
F.M. : 40

SECTION "B"  
[5Q. × 8 = 40 marks]

Attempt *ANY FIVE* questions. Neat diagram must be drawn wherever necessary. Assume suitable data, if necessary.

1. a. What are functions of the screen pack and breaker plate at die end of the extruder barrel? [2]  
b. Why cannot thermosetting polymer be used in thermoforming processes? [2]  
c. Describe the calendaring process. [4]
2. a. How nontraditional machine processes are classified? [2]  
b. Explain with neat sketches, principal, need, equipment, operation, advantages and disadvantages of the following nontraditional machine processes. [3+3]  
i. Water jet Machining  
ii. Electrochemical Machining
3. a. What is powder metallurgy? Write a flow chart for fabricating powder parts. [4]  
b. Name various method of powder production and describe the morphology of powder production by each method. [4]
4. a. What are the important properties for the curves designing? [2]  
b. Find the reflection of a point (6, 6) about a line  $y = 8x + 3$  [2]  
c. Generate a Bezier curve using the following control points. [4]  
(5,4,2), (6,2,3), (5,-2,4) and (6,-4,3).

5. a. What do you understand by word "canned cycle" in manual part programming? Explain with neat sketches the differences between the operation of the canned cycles G81 and G83. [3]  
b. Write a CNC Milling part program manuscript for the Figure 1. (Instruction: Use subroutine techniques and standard format) [5]

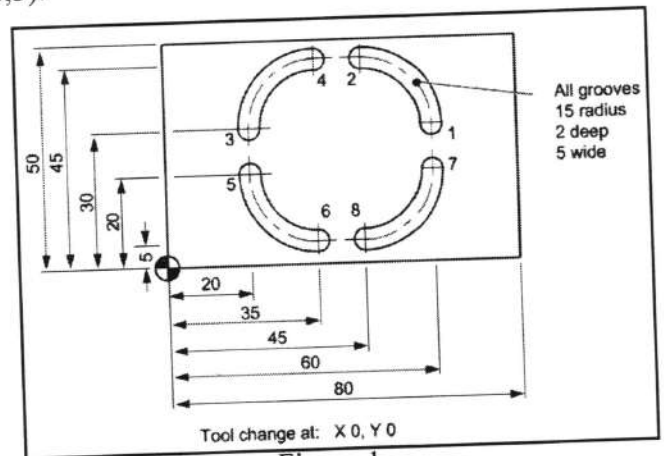


Figure 1.

6. a. Write short notes on OPITZ code system. [2]  
b. What is group technology? How it is useful in FMS? [2]  
c. Discuss the following rapid prototyping methods. [2+2]  
i. Fuse Deposition Method  
ii. Solid Ground Curing

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