UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

Course: CAD/CAM   Semester: VII
Program: B Tech (Mechanical and Mechanical with Specialization)   Time 03 hrs.
Course Code: GNEG 363   Max. Marks: 100

Instructions:

SECTION A			
S. No.		**Marks**	**CO**
Q 1	Write stages in product life cycle.	**4**	**CO1**
Q 2	Derive the relationship for geometric rotation in XY plane.	**4**	**CO2**
Q 3	Explain Constructive Solid Geometry concept of solid modeling.	**4**	**CO3**
Q 4	State the benefits and limitations of Group Technology.	**4**	**CO5**
Q 5	Explain flexible manufacturing system with diagram.	**4**	**CO1**
SECTION B			
Q 6	Why non-parametric representation of curves is less used compared to parametric representation in CAD?	**10**	**CO3**
Q 7	A line having end points (3, 3) and (5, 5) is reflected about a line Y = 3x. Find final position of the line.	**10**	**CO2**

Q 8	Write a short note on
	    (i) Cellular Manufacturing
	    (ii) Concurrent Engineering
		10	**CO4**

Q 9	Give the details of SLS rapid prototyping system. OR Why is rapid protyping used in modern manufacturing system? Explain briefly LOM rapid protyping system.	**10**	**CO4**
SECTION-C			
Q 10	Why Bezier splines are highly useful and convenient for curve and surface design? Generate a Bezier curve with following control points (1, 2), (3, 4), (6, -6) and (10, 8).	**20**	**CO3**
Q 11	(i) Compare the methods used for forming cells in group technology? Briefly explain them with an example. (ii) Justify production flow analysis as the best method of forming part families.	**20**	**CO5**

OR

Obtain the part families for the incidence matrix given in the table below using Rank Order Clustering method Algorithm.

Parts → Machines ↓	1	2	3	4	5	6	7	8	9	10
A		1		1			1	1		1
B		1		1					1	1
C	1		1		1		1		1	
D				1		1		1	1	1
E	1		1			1		1		1