



Name:

Enrolment No:

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, May 2023**

**Programme Name: B. Tech- Mechanical**

**Semester : VI**

**Course Name : Computer Integrated Manufacturing**

**Time : 03 hrs.**

**Course Code : MEPD 4007P**

**Max. Marks : 100**

**Nos. of page(s) : 1**

**Instructions:**

- i. Read the instructions carefully before attempting.
- ii. No submission of the Answer Sheet shall be entertained after due time.
- iii. Attempt All Questions. One question from section B and C have an internal Choice.

**SECTION A**  
**(5Qx4M=20Marks)**

S. No.		Marks	CO
Q 1	a) Define CIM b) Define batch production with suitable example	4	CO1
Q 2	List out different types of AS/RS system.	4	CO1
Q 3	Explain the roles of prototypes.	4	CO2
Q 4	Summarize the benefits of Group Technology.	4	CO2
Q 5	Identify the major input files of MRP.	4	CO3

**SECTION B**  
**(4Qx10M= 40 Marks)**

Q 6	(a) Define Reverse Engineering and recall the steps required in the process of reverse engineering. (b) List out the different attributes typically included in a group technology classification and coding system.	5 +5 M	CO1
Q 7	(a) Describe the main objectives of the Inventory Management system. (b) Write a short note on Pareto Principle.	5+5 M	CO1
Q 8	(a) Explain and discuss Cellular Manufacturing. (b) Explain and discussed composite part concept in accordance with Group Technology.	5+5 M	CO2

Q 9	<p>Identify the benefits of computer-aided process planning and discuss the Retrieval CAPP with suitable block diagram.</p> <p style="text-align: center;">OR</p> <p>(a) Write a note on computer aided cost estimation.</p> <p>(b) Identify the various component of computer aided shop floor control and discussed about them with the help of a block diagram.</p>	<p><b>10 M</b></p> <p><b>5+5 M</b></p>	<p><b>CO3</b></p>																																																																													
<p><b>SECTION-C</b></p> <p><b>(2Qx20M=40 Marks)</b></p>																																																																																
Q 10	<p>(a) Explain concurrent engineering with suitable block diagram.</p> <p>(b) Infer the limitations of production flow analysis</p> <p>(c) Consider the problem of 5 machines and 10 parts. Try to group them by using Rank Order Clustering Algorithm.</p> <table border="1" data-bbox="240 772 1255 1150" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th colspan="10">COMPONENTS</th> </tr> <tr> <th>M/C</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>M2</td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td> </tr> <tr> <td>M3</td> <td>1</td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>M4</td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>M5</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> </tr> </tbody> </table>		COMPONENTS										M/C	1	2	3	4	5	6	7	8	9	10	M1	1	1	1	1	1		1	1	1	1	M2		1	1	1					1	1	M3	1				1	1	1	1			M4		1	1	1				1	1	1	M5	1	1	1	1	1	1	1	1			<p><b>5+5+10</b></p>	<p><b>CO2</b></p>
	COMPONENTS																																																																															
M/C	1	2	3	4	5	6	7	8	9	10																																																																						
M1	1	1	1	1	1		1	1	1	1																																																																						
M2		1	1	1					1	1																																																																						
M3	1				1	1	1	1																																																																								
M4		1	1	1				1	1	1																																																																						
M5	1	1	1	1	1	1	1	1																																																																								
Q 11	<p>(a) Identify various components of a Shop Floor and discuss the objectives and benefits of Shop Floor Management.</p> <p>(b) Identify the techniques used for collecting the data from shop floor</p> <p>(c) Identify the purposes of material requirements planning</p> <p style="text-align: center;">or</p> <p>(a) Identify objectives of Inventory Management system.</p> <p>(b) Identify the various modern techniques used for Inventory Control and discuss Re-Order Point technique.</p> <p>(c) Identify the smart sensors that enable Industry 4.0 and discuss them.</p>	<p><b>10+5+5</b></p> <p><b>5+10+5</b></p>	<p><b>CO3</b></p>																																																																													