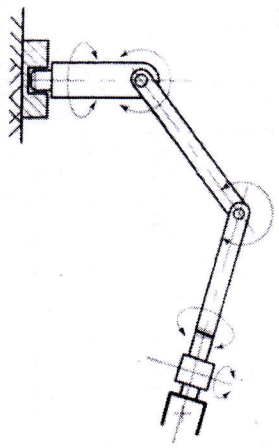
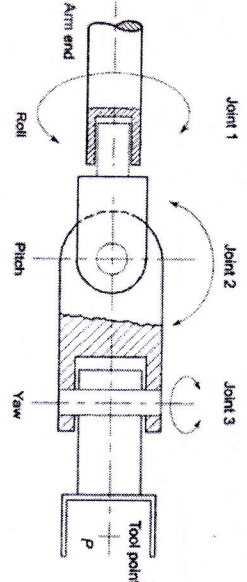


DEPARTMENT OF MECHANICAL ENGINEERING

Class Test – II	Session - Jan to June, 2023	Month - April
Sem - 8 th	Subject – ROBOTICS	
Code-D037811(037)	Time Allowed: 2 hrs	Max Marks: 40

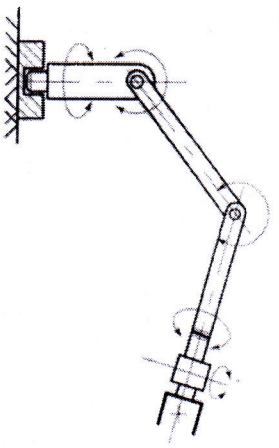
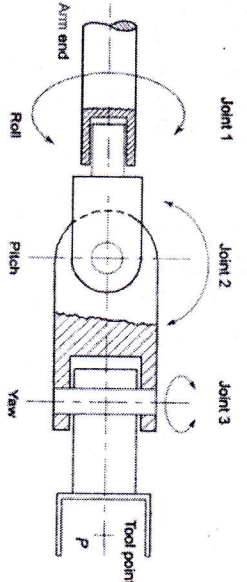
Note:- Part A of each unit is compulsory and attempt any 2 from B,C,D

Q. No	Questions	Marks	Levels of Bloom's taxonomy
Question – 1			
A	Explain Denavit-Hartenberg notation	4	Understanding
B	An Articulated arm kinematic model is shown in figure. Obtain the transformation matrix for the end point. 	8	Applying
C	For the 3-DOF roll-pitch-yaw (RPY) wrist shown in figure obtain the direct kinematic model. 	8	Applying

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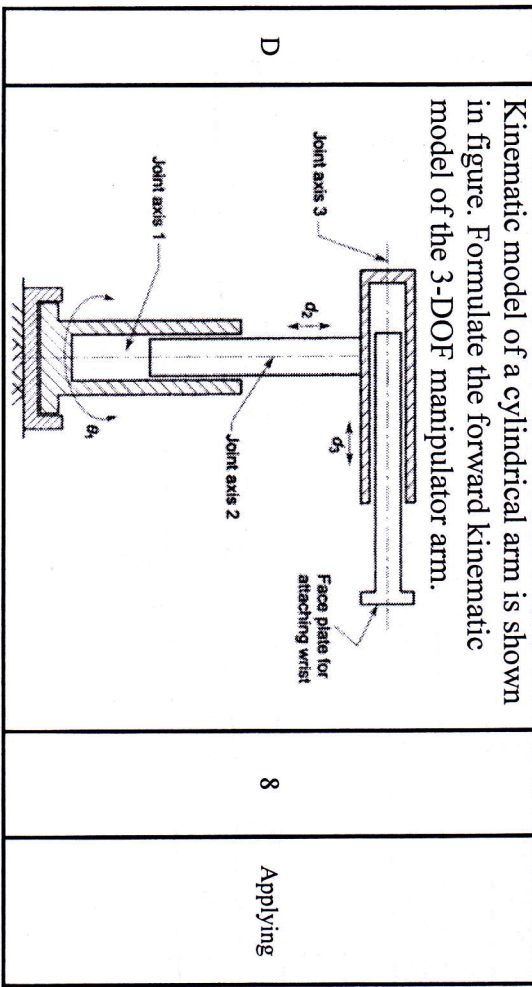
Note:- Part A of each unit is compulsory and attempt any 2 from B,C,D

Q. No	Questions	Marks	Levels of Bloom's taxonomy
Question – 1			
A	Explain Denavit-Hartenberg notation	4	Understanding
B	An Articulated arm kinematic model is shown in figure. Obtain the transformation matrix for the end point. 	8	Applying
C	For the 3-DOF roll-pitch-yaw (RPY) wrist shown in figure obtain the direct kinematic model. 	8	Applying

27/09/23/mecch/Robotics

Question - I

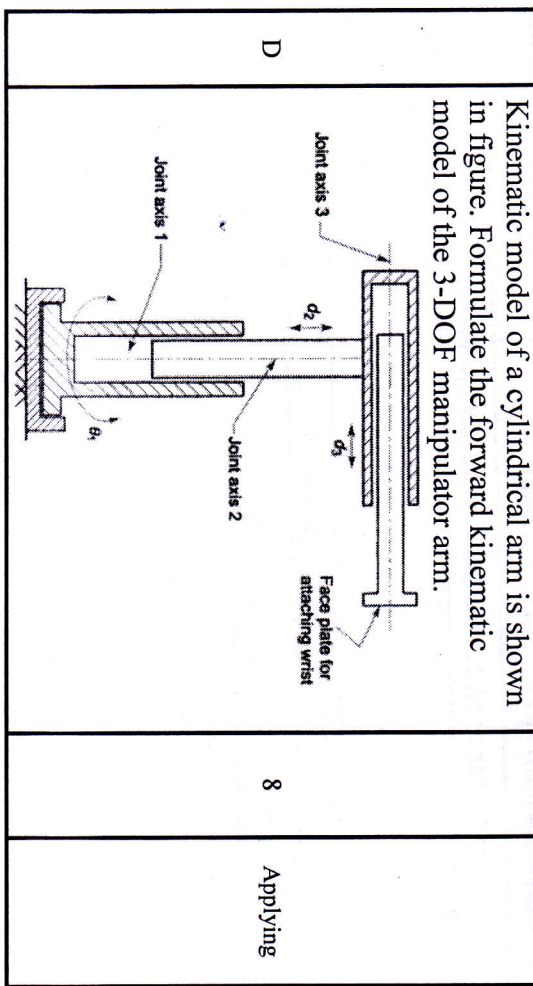
Kinematic model of a cylindrical arm is shown in figure. Formulate the forward kinematic model of the 3-DOF manipulator arm.



8 Applying

Question - I

Kinematic model of a cylindrical arm is shown in figure. Formulate the forward kinematic model of the 3-DOF manipulator arm.



8 Applying

Question - II

A	Explain Optical Encoders.	4	Understandi ng
B	Classify different types of Robotic Sensors	8	Understandi ng
C	What are industrial applications of Vision Controlled Robotic systems?	8	Understandi ng
D	Explain the inspection application of Robots	8	Applying

Question - II

A	Explain Optical Encoders.	4	Understandi ng
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SHRI SHANKARACHARYA INSTITUTE OF PROFESSIONAL MANAGEMENT AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

Class Test: II

Session: January-June, 2023

Month: April, 2023

Semester: 8th

Subject: Industrial Engineering and Management

Code: D000802(076)

Time Allowed: 2 Hours

Max Marks: 40

Note: - Part A of Question 1 and Question 2 is compulsory, from other parts B, C and D of Question 1 and Question 2, attempt any TWO parts.

Ignore the column of Level of Bloom's taxonomy and CO.

Q. No	Questions	Marks	Levels of Bloom's taxonomy	CO
Question 1				
1.A	Explain the meaning of the term 'Human Resource Management'	4	Remember	4
1.B	Explain the features, advantages and limitations of (i) job enrichment and (ii) job enlargement.	8	Apply	4
1.C	Analyze the needs and types of motivation.	8	Analyze	4
1.D	Explain the nature, objectives and importance of Human Resource Management.	8	Understand	4

Question 2

2.A	Explain the meaning of 'Marketing Mix'.	4	Understand	5
2.B	Explain in detail 'Break Even Analysis' with example.	8	Apply	5
2.C	Explain 'Capital Budgeting' in detail.	8	Understand	5
2.D	Explain the meaning, objectives, functions and 5Ms of advertising.	8	Apply	5

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TECHNOLOGY, RAIPUR**

DEPARTMENT OF MECHANICAL ENGINEERING

Class Test: II

Session: January- June, 2023

Month: April, 2023

Semester: VIII

Subject: Product Design and Development

Code: D037833(037)

Time Allowed: 2 Hours

Max Marks: 40

Note: - Part A of Question 1 and Question 2 is compulsory. Attempt any Two Parts out of B, C and D in Question 1 and Question 2.

Q. No	Questions	Marks	Levels of Bloom's Taxonomy	CO
Question 1				
1.A	Explain the meaning of Product Architecture.	4	Understanding	CO1
1.B	Explain six phases (steps) of product development process.	8	Applying	CO1
1.C	Explain the steps involved in establishing target specifications.	8	Applying	CO1
1.D	Explain in detail five steps of concept generation method.	8	Applying	CO1

Question 2				
2.A	Define Design for Manufacturing (DFM).	4	Remembering	CO3
2.B	How is the manufacturing cost estimated? Explain in detail different elements of manufacturing cost analysis.	8	Applying	CO3
2.C	Explain in detail principle of prototyping.	8	Applying	CO3
2.D	Differentiate between Design for Manufacturing (DFM) and Design for Assembly (DFA). Analyze the impact of Design for Manufacturing (DFM) decisions on product development and process cost.	8	Analyzing	CO3