UNIT-I, INTRODUCTION

PART-A

1. Define CAPP.

2. List out the types of various Approaches to Process Planning.

3. Define process planning.

4. Draw the functional diagram of CAPP system.

5. List the activities associated with process planning.

6. What is meant by concurrent engineering?

7. What is manufacturing cycle?

8. What is production planning?

9. What are the activities of production planning?

10. What is group technology?

11. What is part family?

12. What are the three basic code structures used in GT applications?

13. List any six coding systems that are widely recognized in industries.

14. What are the important functions of production planning.

15. State the role of GT in CAD/ CAM.

16. List any four benefits of CAPP.

17. Mention the benefits of GT.

18. List out the techniques available for formation of cell in GT.

19. Write few of the CAPP programming languages.

20. List out the stages in Group Technology.

PART-B

1. Briefly discuss the various benefits of implementing a GT in a firm. Also bring

    Out the advantages and limitations of using GT.

2. Discuss the importance of process planning in product development.

3. Explain about manufacturing cycle.

4. Describe about concurrent engineering.

5. Briefly explain the steps involved in generation of route sheet using variant approach CAPP.

6. What is group technology? Also explain why group technology is important in achieving CAD and CAM integration.

7. Explain in detail the process planning activities.

8. Explain the manual approach process planning. What are its advantages and limitations?

9. What is meant by CAPP? List out the benefits of CAPP systems.

10. Explain the technological frame work of process planning by using a block diagram. Also explain why process planning is important in achieving the integration of CAD/CAM.

UNIT-II, PART DESIGN REPRESENTATION

PART-A

1. Define CAD.

2. List the fundamental reasons for implementing a CAD system.

3. List the various desirable features of a CAD packages.

4. Mentionthe basic types of geometric transformation?

5. List any four rules in dimensioning.

6. What is meant by geometry and topology?

7. What is meant by design drafting?

8. Differentiate between conventional tolerance and geometric tolerance.

9. What is meant by perspective transformation?

10. Define data structure.

11. Classify Geometric modeling.

12. What are wire frame model and surface models?

13. List the various coding systems widely used.

14. What is MICLASS system?

15. Define optiz system.

16. What are the input and output devices used in CAD?

17. CAD helps in integrating CAM- Justify this statement..

18. What are the basic Geometric commands in AutoCAD?

19. Write 3D transformation matrix for both translation and scaling.

20. What do you mean by geometric modeling?

PART-B

1. Specify the three principal classifications of the geometric modeling systems and write in brief about each of them.
2. For a cubic Bezier curve, carry a similar matrix formulation to a cubic spline.
3. Give the general configuration of a CAD computer system and In what ways CAD can help manufacturing activity? Discuss.
4. Explain how CAD helps to synthesize a product design and do engineering analysis for getting optimal design.
5. With the help of a block diagram, explain the computer aided design process.
6. Explain the optiz classification system generally used in group technology.
7. Write an engineering brief about (i) DCLASS and (ii) CODE classification systems.
8. Explain any four 2D geometric transformations with suitable illustrations.
9. Write short notes on the following 3D geometric transformations.
   (a) 3D translation (b) 3D scaling (c) 3D rotation (d) 3D reflection (e) 3D shearing
10. Compare and contrast the CSG and B.rep techniques of solid modeling.
11. Discuss about MICLASS and DCLASS classification and coding system.

UNIT-III PROCESS ENGINEERING AND PROCESS PLANNING

PART-A

1. What are the Functions of Process Engineering?
2. Draw the Flow Diagram of the CAPP Process Planning System.
3. Write any two Generative Process Planning Advantages and Disadvantages.
4. Define decision table.
5. Write the types of Process Planning Approaches.
6. Write the procedure to Developing Decision Tables.
7. What are the types of Decision Table?
8. Define Decision tree.
9. What is meant by process capability analysis?
10. Compare forward planning and backward planning.
11. List some commercial variant and generative CAPP software systems.
12. What is the basis for forming groups in group technology?
13. What is meant by input format?
14. Define AL.

PART-B

1. Explain the methodology to the followed for developing a generative type computer aided process planning   system.
2. Explain the stages involved in the development and manufacturing of a new product.
3. Explain retrieval and generative CAPP systems.
4. What are the various approaches to process capability analysis? Explain them.
5. Explain the various decision tables.
6. Explain about decision trees and its types.
7. Differentiate between generative and variant approach in CAPP. Also write the benefits of CAPP.
8. Briefly explain the steps involved in generation of route sheet using variant approach CAPP.

9. List the information required for process planning. What are the factors that influence process planning?
10. Write short notes on (a) input format (b) forward planning (c) backward planning (d) AL.

UNIT-IV COMPUTER AIDED PROCESS PLANNING SYSTEMS

PART-A

1. What is logical design of a process planning?

2. How CAM-I works?

3. What is MIPP?

4. State the functions of AUTOPLAN.

5. What is meant by PRO?

6. Define CPPP.

7. What are the implementation considerations in process planning?

8. List different types of manufacturing system components.

9. What do you mean by production volume?

10. List the various number of production families?

PART-B

1. List and briefly explain the procedure of various logical designs in process planning.

2. Describe in details the decision table and its types.

3. Write short notes on implementation considerations in process planning.

4. Explain, in detail, the phases of process capability analysis.

5. Discuss the importantance of CAPP and CPPP

6. Explain the details about CAM-I and MIPLAN.

7. Describe briefly about the manufacturing system components.

8. Write short notes on PRO and APPAS.

9. Describe briefly about production volume and number of production families.

10. Discuss the need and the importance of the AUTOPLAN? Explain.

UNIT-V, AN INTERGRADED PROCESS PLANNING SYSTEMS

PART-A

1. What are integrated process planning systems?

2. What is meant by modulus structure?

3. What is data structure operation?

4. List the benefits of report generation?

5. Differentiate between report generation and expert process planning.

6. What are the activities of expert process planning?

7. Write any four applications of integrated process planning.

8. Define Process planning and its types.

9. Write the interaction of planning functions.

10. What are the applications of production data structure?

PART-B

1. Describe about totally integrated process planning systems.

2. What are functions of a modulus structure and explain them.

3. Explain the data structure operation and also write its types.

4. Write short notes on report generation.

5. Explain the importance of expert process planning. Also write the reasons for implementing CIM.

6. Differentiate between generative and variant approach in CAPP. Also write the benefits of CAPP.

7. Explain and compare the different types of modulus structure.

8. List some variant and generative CAPP systems that are available commercially.

9. What factors should be considered while selecting the best CAPP sytem.

10. Explain in details the process planning activities.