IV B.Tech I Semester Supplementary Examinations, February/March - 2018

CAD/CAM

(Common to Automobile Engineering and Mechanical Engineering)

Time: 3 hours   Max. Marks: 70

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A Answer any

THREE questions from Part-B

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PART–A *(22 Marks)*

1. a) What is mathematics of projection? [4]
   b) What are layers in CAD? [4]
   c) What is NC mode? [3]
   d) What are the two types of parts similarities? [4]
   e) What additional benefits obtained by integrating CAQC with CAD/CAM? [4]
   f) What are the four basic components of a CIM system? [3]

PART–B *(3x16 = 48 Marks)*

2. a) How the product cycle is revised with introduction of CAD/CAM. [8]
   b) What are the various memories used in a computer? [8]

3. a) What are the various curve representation methods? [8]
   b) How the line and circle are parametrically represented as Analytic curves? [8]

4. a) Differentiate CNC and DNC machines? [8]
   b) What are the various NC elements? [8]

5. a) What are the three general methods to form group parts into families? [8]
   b) What are the various hierarchical structure used in GT applications? [8]

6. a) What are the important effects which results from computer aided quality control? [8]
   b) Discuss about scanning laser system used for non contact inspection. [8]

7. a) What are the important machine tools in a CIM system? [8]
   b) What are the computer components used in CIM? [8]

IV B.Tech I Semester Supplementary Examinations, March – 2017

CAD/CAM

(Common to Mechanical Engineering and Automobile Engineering)

Time: 3 hours

PART – A

Question paper consists of Part-A and Part-BAnswer ALL sub questions from Part-A Answer any THREE questions from Part-B

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Max. Marks: 70

PART–A *(22 Marks)*

1. a) What is raster scan graphics system?
    b) What is the software configuration of a graphics system?
    c) What are the components of CNC machine tools?
    d) What are the various classifications of group technology?
    e) What are the benefits arised when CAQC is integrated with CAD/CAM?
    f) What are the major contribution of the computer in a CIM system. [3+4+4+3+4+4]

PART–B *(22 Marks)*

2. a) Describe the product cycle followed in a CAD/CAM system. [8]
    b) What database structure is implemented for a graphics modeling? [8]

3. Describe at least two editing and solid modeling commands. [16]

4. Discuss the CNC & manual part programming methods. [16]

5. How the information flow takes place in a retrieval type computer aided process planning system. [16]

6. Describe any two methods of non contact type of computer aided testing. [16]

7. What are the characteristic features of material requirement planning? [16]

IV B.Tech I Semester Supplementary Examinations, February - 2019
CAD/CAM

(Common to Automobile Engineering and Mechanical Engineering)

Time: 3 hours   Max. Marks: 70

Question paper consists of Part-A and Part-BAnswer
ALL sub questions from Part-A

Answer any THREE questions from Part-B

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PART–A *(22 Marks)*

1. a) Give a brief note on storage devices. [3]
   b) Enumerate the basic geometric commands. [3]
   c) What is Adaptive control? [4]
   d) Compare generative type and retrieval type CAPP system. [4]
   e) List out the contact and non-contact type inspection methods in quality control. [4]
   f) Give the benefits of computer integrated manufacturing system. [4]

PART–B *(3x16 = 48 Marks)*

2. a) Explain about CAD/CAM hardware. [8]
   b) Describe an algorithm for the removal of hidden lines. [8]

3. a) Discuss the use of various editing commands available in a CAD package [8]
   b) Develop a general form of Bezier curve for the control points given by (0, 2), (2, 3), (3, 2) and (3, 0). [8]

4. a) Discuss the procedure for preparing a NC part program with an example. [8]
   b) Briefly describe the CNC machining centers. With the help of a diagram differentiate between the operations of canned cycles G81 and G83. [8]

5. a) Compare a process type layout and group technology layout for batch production of a simple component. [8]
   b) Discuss Product flow analysis. [8]

6. a) Discuss major non-contact inspection methods. [8]
   b) Enumerate any eight uses of computers in quality control. [8]

7. a) What are the different types of manufacturing systems? Explain with the help of block diagrams. [8]
   b) What do you understand by the term CIM? State and elaborate on the advantages of CIM in a manufacturing unit. [8]

IV B.Tech I Semester Supplementary Examinations, October/November - 2019

CAD/CAM

(Common to Mechanical Engineering and Automobile Engineering)

Time: 3 hours   **Max. Marks: 70**

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A Answer any THREE questions from Part-B

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PART–A *(22 Marks)*

1. a) What is the significance of computers in industrial manufacturing? [3]
   b) Enumerate the display control commands with function of each. [4]
   c) What is Direct Numerical Control? [4]
   d) Give a brief note on retrieval type CAPP system. [4]
   e) Differentiate contact and non-contact type Inspection techniques. [4]
   f) What is MRP? [3]

PART–B *(3x16 = 48 Marks)*

2. a) Explain about different display devices. [8]
   b) A rectangle has corner co-ordinates (10,20) (40,20), (40,40), (10,40). This rectangle is rotated by 30° anticlockwise about (i) origin and (ii) about the point (40,20). Compute the new co-ordinates in both cases. [8]

3. a) Describe about concept of layers. [8]
   b) Describe briefly the following methods of surface modeling with a few application examples: (i) Bicubicsurface   (ii) Bezier surface [8]

4. a) Discuss the four types of statements used in APT part programming. [8]
   b) State the advantages and disadvantages of Numerical Control. [8]

5. Write short note on any three of the following
   (i) Production flow analysis
   (ii) Need of computer aided process planning
   (iii) Advantages of group technology
   (iv) Generative Vs Retrieval CAPP system [16]

6. a) Discuss the integration of CAD database with CAQC. [8]
   b) Discuss the important benefits of computer-aided quality control. [8]

7. a) Explain the various material handling systems used in CIMS. [8]
   b) Discuss the computerized elements of CIM system. [8]

IV B.Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018

CAD/CAM

(Common to Automobile Engineering and Mechanical Engineering)

Time: 3 hours   Max. Marks: 70

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B

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PART–A *(22 Marks)*

1.	a)	Define the terms CAD and CAM.	[4]
	b)	What do you understand the 'Snap' feature in CAD?	[3]
	c)	Write the syntax for geometry statement & motion statement in APT language.	[4]
	d)	Enumerate the advantages of group technology.	[4]
	e)	What is meant by computer aided quality control?	[3]
	f)	Name some material handling equipment.	[4]

PART–B *(3x16 = 48 Marks)*

2.	a)	What are the various display devices that are used for displaying graphic information? Present their merits and demerits.	[8]
	b)	Define clipping. Also explain the working of a simple line clipping algorithm.	[8]

3.	a)	What is meant by sweep? Discuss in detail the various types of sweep techniques available for 3D geometric construction.	[8]
	b)	Write short note on following:	
		(i) Concept of layers	
		(ii) Solid modeling	[8]

4.	a)	Discuss the concept of adaptive control and also explain its types.	[10]
	b)	Write a part program for the component shown in figure 4 (b) below :	

Work material : mild steelWork size : 32 mm dia Length : 90 mm
Speed : 800 r.p.m. Feed : 200 mm/minDepth of cut 2mm
Assume other data.   [6]
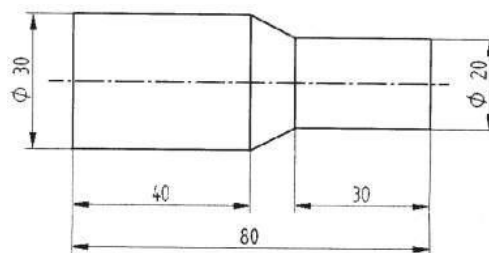

Figure 4(b)

5. a) Discuss how part classification is done in the context of GT. [8]
   b) Explain Retrieval type CAPP system with the help of a block diagram. [8]

6. a) Define the term quality? Write the terminology used in computer aided quality control. [8]
   b) Explain the different types of contact inspection techniques used in CAQC systems. [8]

7. Write short notes on any **THREE** of the following:
   (a) Types of Manufacturing systems
   (b) Computer control system
   (c) Automated Guided Vehicles
   (d) Automated storage and Retrieval System(AS/RS) [16]

IV B.Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018

CAD/CAM

(Common to Automobile Engineering and Mechanical Engineering)

Time: 3 hours   Max. Marks: 70

Question paper consists of Part-A and Part-BAnswer
ALL sub questions from Part-A Answer any THREE
questions from Part-B

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PART–A *(22 Marks)*

1. a) What are the benefits of computer aided design over conventional design process. [4]
    b) Write any 4 AutoCAD commands with small description. [4]
    c) State the functions of the following G & M codes:
       (i) G01 (ii) G03 (iii) M03 (iv) M06 [4]
    d) What is the need of part analysis? [3]
    e) What is the role of computers in quality control? [3]
    f) State the objectives of CIM system. [4]

PART–B *(3x16 = 48 Marks)*

2. a) Explain about the following 3D transformations:
       (i) Translation   (ii) Rotation [8]
    b) Briefly describe the types of storage devices used in computers. [8]

3. a) What are the requirements of geometric modeling? [8]
    b) Describe the features of a Drafting package. [8]

4. a) What is part programming and write its types. [8]
    b) Differentiate CNC and DNC control systems. [8]

5. a) How do you overcome the difficulties in traditional process planning by
       adoptingCAPP method? [8]
    b) Discuss the advantage and disadvantages of OPITZ code system. [8]

6. a) Explain the procedure for integrating CAQC with CAD/CAM. [8]
    b) What are the instrumentation required for computer aided inspection? [8]

7. a) What is Material requirement planning? Explain the structure of MRP system. [8]
    b) Why are the unskilled labors replaced with skilled labors in computer
       integratedmanufacturing systems? [8]

CAD/CAM
(Common to Automobile Engineering and Mechanical Engineering)

Time: 3 hours   **Max. Marks: 70**

Question paper consists of Part-A and Part-BAnswer
ALL sub questions from Part-A Answer any THREE
questions from Part-B

*****

PART–A *(22 Marks)*

1. a) List out input and output devices of CAD.   [3]
   b) Differentiate between wire frame modeling and surface modeling.   [4]
   c) Differentiate NC and CNC.   [4]
   d) What are the various approaches available for CAPP?   [3]
   e) Define off-line and on-line inspections.   [4]
   f) What are the benefits of CIM?   [4]

PART–B *(3x16 = 48 Marks)*

2. a) Write the 3-D transformation matrices for rotation, scaling, translation & Mirroring in homogeneous coordinates.   [8]
   b) Briefly explain the concept of various coordinate systems required for geometric display systems. [8]

3. a) Find the equation of a Bezier curve which is defined by four control points as (80,30,0), (100,100,0),(200,100,0) and (250,30,0).   [8]
   b) What types of typical dimensioning facilities are available in a drafting system?   [8]

4. Prepare a computer aided part program (APT) to finish the profile of the partshown in figure 4 (a) below.
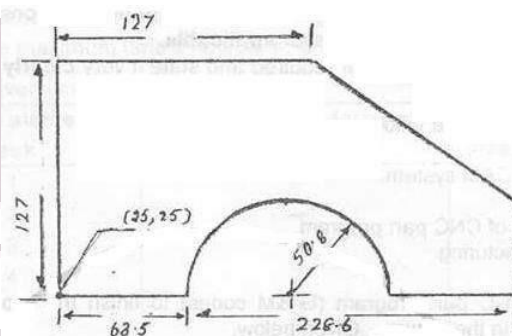

Figure 4(a)   [16]

5. a) Explain MICLASS coding system in GT.   [8]
   b) What is a production Flow Analysis? Discuss various steps involved in PFA.   [8]

6. a) Define computer aided quality control. Explain how it is implemented.   [8]
   b) Explain any one non contact inspection technique with neat sketch.   [8]

7. a) What are the three major elements of an AS/RS? Explain   [8]
   b) Explain the different types of computer control systems used in CIM.   [8]