

Hall Ticket Number : 

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**R-17**

**Code: 7G574**

IV B.Tech. I Semester Supplementary Examinations Nov/Dec 2022

**CAD/CAM**

( Mechanical Engineering )

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks )

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**UNIT-I**

1. With the help of a block diagram, explain the computer aided design process 14M

**OR**

2. Briefly explain the concept of various coordinate systems required for geometric display systems. Give examples. 14M

**UNIT-II**

3. What is meant by a geometric entity? Explain the common entities used in geometric modeling. 14M

**OR**

4. a) Summarize briefly about wireframe modeling? 7M

b) Derive the Hermite bi-cubic curve equation in wire frame model? 7M

**UNIT-III**

5. a) Outline what are NC elements? Explain the features of NC machining center. 7M

b) List the advantages and disadvantages of Numerical control of machine tools. 7M

**OR**

6. a) Paraphrase a short notes on Computer assisted part programming 4M

b) Identify the role of manual part programming in CNC machines and illustrate the significance of G and M Codes in manual part programming? 10M

**UNIT-IV**

7. a) Describe machine cell design in group technology 7M

b) Compare a process type layout and group technology layout for batch production of a simple component. 7M

**OR**

8. a) Develop the form code in the opitz system for any simple part of your choice. 7M

b) Discuss Product flow analysis. 7M

**UNIT-V**

9. a) Discuss various FMS layout configurations. 7M

b) What are the functions performed by FMS computer control system. 7M

**OR**

10. List out the various elements of a CIM system and explain each one of them briefly. 14M

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Hall Ticket Number :

**R-17**

**Code: 7G572**

IV B.Tech. I Semester Supplementary Examinations Nov/Dec 2022

**Automobile Engineering**  
(Mechanical Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

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**UNIT-I**

1. a) Discuss about 'crank case ventilation' 5M  
b) Discuss in brief about the concepts of turbo charging and super charging with neat sketch? 9M

**OR**

2. Describe the requirements of automobile headlights and explain how they have been met with modern designs of head lights. 14M

**UNIT-II**

3. a) What is the A/F mixture requirements at different loads and speeds for automobile engine? 7M  
b) Name the different methods of fuel injection system. Explain airless solid injection system in C.I engines. 7M

**OR**

4. a) What are the sources of HC formation in petrol engines? Explain various factors which effect the HC formation. 7M  
b) Explain the suitability of LPG and CNG in automobile engines. 7M

**UNIT-III**

5. a) Explain with a neat sketch the working principle of evaporative cooling system used in automobile 9M  
b) Write the functions of thermostat and antifreeze solutions. 5M

**OR**

6. a) Name the different methods of engine cooling. Explain in detail the air cooling method 7M  
b) Describe with a neat diagram the electronic ignition system using contact breaker. 7M

**UNIT-IV**

7. a) Explain the construction, working and performance of a fluid flywheel. 7M  
b) How torque tube drive is different from Hotch kiss drive? 7M

**OR**

8. With neat sketches explain the working principle of constant mesh gear box & sliding mesh gear box. Give the differences between these two. 14M

**UNIT-V**

9. Discuss in detail about the principle and operation of Ackerman and Davis steering gear mechanism. 14M

**OR**

10. Write the classifications of brakes. Describe the construction and working of drum type mechanical brake. 14M

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