

**CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY**  
**HEAD OFFICE: GUINDY, CHENNAI – 600 032.**  
**ACADEMIC CELL**  
**FIFTH SEMESTER EXAMINATION – JANUARY - 2024**

Duration : 3 Hours  
Course : DPMT  
Subject : CNC Machining Techniques

Max. Marks: 60  
Date : 09.01.2024  
Time : 02.00 p.m. to 05.00 p.m.

**(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)**

**PART – A**

Answer **all** questions

12 x 1 = 12

1. Tape reader is used in \_\_\_\_\_ Machines
2. In NC (Numerical Control) machine tool, the position feedback package is connected between
  - a) control unit and programmer
  - b) programmer and machine tool
  - c) control unit and machine tool
  - d) programmer and process planning
3. In CNC machine tool, the part program entered into the computer memory
  - a) Can be used only once
  - b) Can be used again and again
  - c) Can be used again but it has to be modified every time
  - d) Cannot say
4. The feedback system used in NC Machine can be.
  - a) Analog
  - b) Digital
  - c) Either Analog or Digital
  - d) None of the above
5. EDM wire is made of \_\_\_\_\_ material.
6. In a CNC Lathe machine, work piece rotates in \_\_\_\_\_ axis
7. G-Codes & M- Codes are used in ISO Programming - Say True or False.
8. G00 indicated linear motion in rapid traverse - Say True or False
9. Horizontal movement of worktable in wire EDM determines the path to be machined- Say True or False
10. What do you mean by ATC \_\_\_\_\_
11. IGES is a file format which defines a vendor neutral data format that allows the digital as \_\_\_\_\_
12. MDI is known as \_\_\_\_\_

**PART – B**

Answer **all** questions (Max. 40 words)

4 x 2 = 8

1. What are the different types of controllers used for CNC Machine?
2. What is spark gap?  
Mention the common steps for both operator and NC Machine working principle?
3. Classify the different types of NC Machine Tools Control Systems?
4. Define Preparatory Code & Miscellaneous Code?

**PART – C**

Answer any **six** questions (Max. 100 words)

6 x 4 = 24

1. Differentiate between the NC & DNC systems?
2. Define tool length offset and how does it was measured?
3. Define about a) Part Zero b) Block?
4. Explain about the different types of Advance Mechanisms used in CNC machining centre?
5. Classify the different types of CNC machining centre configurations?
6. What do you mean by Canned Cycle & give two examples?
7. Define the different electrode materials which are used commonly in the industry?

**PART – D**

Answer any **two** questions (Max. 300 words)

2 x 8 = 16

1. Describe about the working principle of NC-DNC-CNC systems with a neat diagram?
2. Describe about the CNC Machining & Turning centre's & its other types of equipments working principles?
3. a) Draw a neat sketch of EDM showing its main parts with descriptions? .  
b) Describe the construction and working principle of CNC Wire EDM machine with a neat sketch?

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**FIFTH SEMESTER EXAMINATION – JANUARY - 2024**

Duration : 3 Hours  
Course : DPMT  
Subject : Mould Manufacturing Technology

Max. Marks: 60  
Date : 10.01.2024  
Time : 02.00 p.m. to 05.00 p.m.

**(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)**

**PART – A**

Answer **all** questions

12 x 1 = 12

1. The Punch tape reader in CNC machine is -----  
a. feedback system      b. input device      c. Program      d. Driving system
2. In machining of a workpiece, the material is removed by -----  
a. drilling action      b. melting action      c. shearing action      d. Using brittleness of the material
3. Surface roughness on drawing is represented by -----  
a. Circles      b. Squares      c. Curves      d. Inverted triangles
4. In a part programming, interpolation is used for obtaining ---- -----
5. Angle between the lathe centres is -----
6. Feed is measured in units of -----
7. Machine control unit implements interpolation commands to generate axial motion commands – Say True or False
8. An absolute NC System is one in which all position coordinates are referred to one fixed origin called the zero point - Say True or False
9. In chemo – mechanical polishing (CMP) process, material is removed due to abrading - Say True or False
10. VMC Stands for-----
11. FPM Stands for -----
12. MRR Stands for -----

**PART – B**

Answer **all** questions (Max. 40 words)

4 x 2 = 8

1. List down any four mould steels
2. What are the conventional machines used for machining of mould parts?
3. Define Spark Gap
4. What are the polishing tools used in mould making?

**PART – C**

Answer any **six** questions (Max. 100 words)

6 x 4 = 24

1. Explain the significance of Lathe and Milling machines for machining of mould parts
2. What are the types and properties of Dielectric fluids and electrode materials?
3. Write the principles of shaper machine?
4. How does the pantograph engraving machine works? Why it is used?
5. Classify the different types of cutting tools and tool holding devices used for CNC Milling machine
6. What is Ultra sonic polishing? write the advantages
7. What are the non-ferrous materials and where are they used in moulds?

**PART – D**

Answer any **two** questions (Max. 300 words)

2 x 8 = 16

1. What is the working principle of Electro deposition used in mould making? Describe it with conceptual diagram?
2. Describe the construction and working principle of EDM and write its advantages and disadvantages.
3. Write a short on a. Jig Boring Machine b. Process of Etching?

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**FIFTH SEMESTER EXAMINATION – JANUARY - 2024**

Duration : 3 Hours  
Course : DPMT  
Subject : Process Planning & Cost Estimation

Max. Marks: 60  
Date : 11.01.2024  
Time : 02.00 p.m. to 05.00 p.m.

**(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)**

**PART – A**

Answer **all** questions

12 x 1 = 12

1. Cost of transportation of good comes under  
(a) Factory overheads (b) Administrative overheads (c) Selling overheads (d) Distribution expenses
2. Zero based Budgeting allows to implement in \_\_\_\_\_ areas of the organization.  
(a) Specific (b) Random (c) In each and every steps (d) All of the above
3. Basic tool in work study is  
(a) graph paper (b) process chart (c) planning chart (d) stop watch
4. Cutting Speed unit is \_\_\_\_\_. (min./meter, meter/min., RPM)
5. \_\_\_\_\_ is the time consumed by the worker to attend his personal needs.
6. The technique and process of ascertaining cost is called\_\_\_\_\_.
7. Production and productivity are one and the same. Say true or false.
8. Personnel Allowance is allowed to overcome tiredness. Say True or False.
9. Overheads are the expenses other than Direct Material and Direct Labour. Say True or False.
10. EOQ stands for. \_\_\_\_\_.
11. FIFO stands for\_\_\_\_\_.
12. MRP stands for\_\_\_\_\_.

**PART – B**

Answer **all** questions (Max. 40 words)

4 x 2 = 8

1. What are the three elements of cost.
2. Explain the term Process Planning.
3. What is Standard time?
4. Define the term Industrial Engineering.

**PART – C**

Answer any **six** questions (Max. 100 words)

6 x 4 = 24

1. Expand and Explain DFM
2. What are the advantages & disadvantages of Mass production.
3. What are the methods to increase productivity?
4. Explain the process planning procedure briefly.
5. What are the benefits for make or buy decision?
6. Draw a sample of the operation planning sheet.
7. Write the techniques of cost reduction.

**PART – D**

Answer any **two** questions (Max. 300 words)

2 x 8 = 16

1. Explain the various types of process planning method.
2. Explain the procedure for method study and its objective.
3. A factory produces 100 bolts and nuts per hour on a machine. Material cost is Rs. 375, labor Rs. 245 and direct expense is Rs. 80. The factory on cost is 150% and office on cost is 30%. If the sales price is Rs. 11.30 find whether company incurs profit or loss.

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**FIFTH SEMESTER EXAMINATION – JANUARY - 2024**

Duration : 3 Hours  
Course : DPMT  
Subject : Industrial Management & Entrepreneurship

Max. Marks: 60  
Date : 12.01.2024  
Time : 02.00 p.m. to 05.00 p.m.

**(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)**

**PART – A**

Answer **all** questions

12 x 1 = 12

- 1) ISO is a?  
(a) System                      (b) Standards                      (c) Rules                      (d) procedure
- 2) HRM Stand for?  
(a) Human Relation Management                      (b) Hiring Resource Management  
(c) Harmony Relation Management                      (d) Human Resource Management
- 3) PPC Stand for?  
(a) Product planning Criteria                      (b) Procedure Planning control  
(c) Process planning code                      (d) Production Planning control.
- 4) ISO 14001 related to \_\_\_\_\_.
- 5) What is meaning of Japanese tool KAIZEN \_\_\_\_\_.
- 6) ISO Stand for \_\_\_\_\_.
- 7) Noise pollution is measure in “db” ( True / False)
- 8) SSI Stand for Small Skill Initiative. ( True/ False)
- 9) Skill Matrix is methodology to identify System Updation (True / False)
- 10) JIT full form?
- 11) TQC stand for ?
- 12) PDCA Stand for ?

**PART – B**

Answer **all** questions (Max. 40 words)

4 x 2 = 8

- 1) Define Management?
- 2) What are the functions of Management?
- 3) How you define Leadership. What are qualities of effective leadership?
- 4) What are the 5-S Japanese tools ?

**PART – C**

Answer any **six** questions (Max. 100 words)

6 x 4 = 24

- 1) What are 7 QC tools ?
- 2) Define Quality ?
- 3) What is difference between Quality Control and Quality Assurance ?
- 4) What are causes of Noise pollution?
- 5) What TQM ?
- 6) Define POKA – YOKE ?
- 7) What is safety audit?

**PART – D**

Answer any **two** questions (Max. 300 words)

2 x 8 = 16

- 1) What is role and responsibilities of Quality Manager ?
- 2) Explain Human Resource Management?
- 3) What is training Need Identification?

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