

**CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY**  
**HEAD OFFICE : GUINDY, CHENNAI – 600 032.**  
**ACADEMIC CELL**  
**FIFTH SEMESTER EXAMINATION – JANUARY - 2022**

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

Max. Marks: 60  
 Date : 04.01.2022  
 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

30 x 1 = 30

1. In a CNC Lathe Machine, work piece rotates in the \_\_\_\_\_.  
 a) X – axis                      b) Y – axis                      c) Z – axis                      d) none of these.
2. Code for "Optional stop" is \_\_\_\_\_.  
 a) M0 1                      b) M80                      c) M30                      d) M98
- 3 Turret is \_\_\_\_\_.  
 a) Tool Holder                      b) Work holder                      c) Vice                      d) Both a & b
4. Tape reader is used in \_\_\_\_\_.  
 a) NC Machines                      b) CNC Machines                      c) DNC Machines                      d) None of these
5. Which mode switch position allows programs to be modified?  
 a) Jog                      b) Edit                      c) Auto                      d) MDI (manual data Input)
6. Which mode switch position allows you to send the machine to its reference (home) position?  
 a) Jog                      b) Edit                      c) Auto                      d) Zero return
7. The button used to activate a CNC program is \_\_\_\_\_.  
 a) Reset                      b) Cycle Start                      c) Emergency Stop                      d) Feed Hold
8. The display screen mode that lets the operator most easily see axis data is the:  
 a) Offset page                      b) Program page                      c) Position page                      d) Program Check page
9. Spindle speed for machining centers is always specified in:  
 a) Surface feet or meters per minute                      b) inches per minute                      c) RPM                      d) inches per revolution
10. G function for Rapid positioning is: \_\_\_\_\_.  
 a) G00                      b) G100                      c) G11                      d) None of the above
11. The device, fed to the control unit of NC machine tool which sends the position command signals to sideway transmission elements of the machine, is called \_\_\_\_\_.  
 a) Controller                      b) tape                      c) feedback unit                      d) none of the above
12. 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
13. In Electrical Discharge Machining (EDM) process the metal removal is carried out by \_\_\_\_\_.  
 a) Electrolysis                      b) Fracture of work material due to impact of grains  
 c) Melting & vaporization                      d) None of the above
14. What G codes are used to create arcs and circles?  
 a) "GARC" will do it                      b) G02 and G03  
 c) G20 and G30                      d)"CIRC" and "ARC" are the commands
15. Each line of a program is called \_\_\_\_\_.  
 a) Block                      b) Syntax                      c) Code                      d).None of these
16. \_\_\_\_\_ Loop system in CNC provides Feedback
17. The abbreviation of CNC is \_\_\_\_\_.
18. In CNC machine M06 code is used for \_\_\_\_\_.
19. Diamond paste is used for \_\_\_\_\_ polishing.
20. In EDM, electrode has \_\_\_\_\_ polarity.
21. Wire cut EDM cuts thin wall tough metals - Say True or false
22. G codes and M codes are used in ISO programming. – Say True or false
23. Material removal rate will decrease or increase in spark gap.-- Say True or False
24. A DNC cannot control more than one CNC Machine at a time.-Say True or False
25. Servomotor controls the individual axis in a CNC machine - Say True or False.
- 26 What is the G Code for metric system?
- 27 What is the G Code for Absolute Position Commands?
28. What is CAD?
29. What is the full form of ATC?
30. Write one electrode materials used in EDM tooling

**PART – B**

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

4 x 2 = 8

1. List at least 3 applications of Spark EDM.
2. Which code is used to cancel the Cutter Compensation ?
- 3 What is Part Programming?
4. What are the basic components of NC Machine?

**PART – C**

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

4 x 3 = 12

1. What do you mean by Canned Cycle?
2. Write the name of operations that can be performed in a Lathe Machine
3. Write short note on G and M Codes
4. Explain the following M-codes.  
(a) M06 (b) M03
5. According to the type of machining or motion What is point to point control system?

**PART – D**

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

2 x 5 = 10

1. What Is open loop control system and closed loop control system?
2. Write Function of dielectric fluid.
3. With neat sketch explain-the construction and working of Wire Cut- EDM.

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FIFTH SEMESTER EXAMINATION – JANUARY - 2022

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

Max. Marks: 60  
Date : 05.01.2022  
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

30 x 1 = 30

1. The Punch tape reader in CNC machine is -----  
a. feedback system      b. input device      c. Program      d. Driving system
2. What indicates number of repetitions in sub-program?  
a. L      b. X      c. P      d. %
3. In CNC System multiple microprocessors and programmable logic controllers work -----  
a. In Series      b. In Parallel      c. 80% of the total machining time      d. One after the other
4. The slowest cooling rate is obtained when steel is quenched in -----  
a. air      b. oil      c. water      d. brine
5. G –Codes & M-Codes are used in ISO Programming - Say True or False.
6. Which of the following code will change in threading cycle?  
a. G88      b. G92      c. G20      d. G21
7. 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
8. To remove material in form of large chips ----- is used  
a. Lathe      b. Drill      c. Mill      d. All of the above
9. Surface roughness on drawing is represented by -----  
a. Circles      b. Squares      c. Curves      d. Inverted triangles
10. Machine control unit implements interpolation commands to generate axial motion commands – Say True or False
11. Stellites is good for metal cutting operation - Say True or False
12. 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
13. The recommended magnitude of pressure for lapping hard materials is -----  
a. 0.2 kg/cm<sup>2</sup>      b. 0.5 kg/cm<sup>2</sup>      c. 0.7 kg/cm<sup>2</sup>      d. 0.9 kg/cm<sup>2</sup>
14. The type of reamer used for reaming operation in a blind hole is -----  
a. Straight Fluted reamer      b. Left hand spiral Fluted reamer  
c. Right hand spiral Fluted reamer      d. None of the above
15. Width of cutting edge of a parting off tool varies from  
a. 3 to 12 mm      b. 5 to 20 mm      c. 8 to 30 mm      d. 15 to 40 mm
16. In a part programming, interpolation is used for obtaining -----
17. Feed is measured in units of -----
18. An arbour is used to ----- and drive the milling.
19. In Electrical discharge machining (EDM), the spark gap is kept between ----- mm to ----- mm
20. Angle between the lathe centres is -----
21. Which of the following represents the unit for machining time?  
a. mm/minute      b. Minute/revolution      c. minute      d. None of the above
22. Why tap drill size to be calculated?  
a. To avoid drill breaking      b. To avoid material wastage  
c. To calculate sufficient cutting speed      d. To maintain sufficient material to tap
23. What type of guide way is used in CNC milling?  
a. Flat      b. Dove tail      c. V and flat      d. LM guide way
24. In chemo – mechanical polishing (CMP) process, material is removed due to abrading - Say True or False
25. Buffing is \_\_\_\_\_ type of operation.  
a. cutting      b. shearing      c. polishing      d. None of the above

26. HMC Stands for -----
27. FPM Stands for -----
28. The abbreviation of TPERF -----
29. MRR Stands for -----
30. DNC Stands for -----

**PART – B**

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

4 x 2 = 8

1. Define 'Alloying Element'.
2. What is pocket milling?
3. Define Surface Roughness.
4. What are the types of mould polishing methods?

**PART – C**

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

4 x 3 = 12

1. Write a simple part Program for CNC turning operation describing each code.
2. Differentiate up milling and down milling with neat sketches.
3. Explain the functions of the dielectric fluid used in EDM.
4. What are the three properties of copper and copper alloys that account for many of their uses and applications?
5. Classify the different types of cutting tools and tool holding devices used for CNC Milling machine.

**PART – D**

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

2 x 5 = 10

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. Pantograph machine?

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**FIFTH SEMESTER EXAMINATION – JANUARY - 2022**

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

Max. Marks: 60  
 Date : 06.01.2022  
 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

30 x 1 = 30

1. Before manufacturing, process planning is \_\_\_\_\_  
 A. Preparatory    B. Recommendatory    C. Compulsive    D. Diagnostic
2. Two Crucial Decisions has to take while accepting orders are \_\_\_\_\_  
 A. Make or buy    B. Purchase and sell    C. Orders and Recommendations    D. Costing & Accounting
3. Production costs are incurred when we do manufacturing for \_\_\_\_\_  
 A. Out of the way    B. Inhouse    C. Transporter    D. Wholesaler
4. Tax is charged on production or outsourcing of manufacturing activity is \_\_\_\_\_  
 A. Octroi    B. SST    C. GST    D. EST
5. The point where there is no profit and loss \_\_\_\_\_  
 A. Sum Even Point    B. Low Even Point    C. Sun Set Point    D. Break Even Point
6. Costs which are fixed is known as \_\_\_\_\_  
 A. Variable Cost    B. Fixed Cost    C. Sunk Cost    D. Opportunity Cost
7. The characteristics of Variable cost is \_\_\_\_\_  
 A. Changing    B. Fixed    C. Depletion    D. Acceleration
8. Man Variant Process Planning mainly known as \_\_\_\_\_  
 A. Manual Process Planning    B. Automated Process Planning  
 C. Generative Process Planning    D. Manpower Process Planning.
9. Man Variant process planning produces \_\_\_\_\_  
 A. Erroneous Report    B. Segment Report    C. Automotive Report    D. Synchronous Report
10. Decision of Process Selection, Process sequencing is known as \_\_\_\_\_  
 A. Manual Process Planning    B. Automated Process Planning  
 C. Generative Process Planning    D. Manpower Process Planning.
11. Value Engineering is useful when it to \_\_\_\_\_  
 A. Increases Value    B. Reduces Cost    C. Cost Control    D. Cost acceleration
12. A Technique used to maintain cost as per set standard is \_\_\_\_\_  
 A. Cost Reduction    B. Cost Control    C. Cost Price    D. Cost acceleration
13. A technology used to economize the unit cost without quality of the product is known as \_\_\_\_\_  
 A. Cost Reduction    B. Cost Control    C. Cost Effective    D. Cost Efficient
14. The Nature of Cost Control is \_\_\_\_\_  
 A. Temporary    B. Permanent    C. Semi-Automatic    D. Automatic
15. Cost Reduction has effect on \_\_\_\_\_  
 A. Present Cost    B. Future Cost    C. Present and Future Cost    D. Nominal Cost
16. Cost reduction is \_\_\_\_\_ type of Function.
17. Cost Control is \_\_\_\_\_ type of Function.
18. In value analysis our prime target is to achieve \_\_\_\_\_.
19. New Idea Generation and Synthesis is the main function of \_\_\_\_\_.
20. Invention is the core phase of \_\_\_\_\_.
21. Costing is the prime function of the organisation (True/False).
22. Innvoation may be used synonymously with Invention (True/False).
23. Break even point does not consider the minimum order to undertake (True/False).
24. Process Planning does not deal with Diffusion (True/False)
25. Co- Injection (Sandwich) moulding is a blow moulding process (True/False).
26. Write Full Form of PV Ratio?
27. Write full form of CAD.
28. Write full form of CAM.
29. 4M's in Manufacturing Process is \_\_\_\_\_
30. Full form of CNC Machine \_\_\_\_\_

**PART – B**

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

4 x 2 = 8

1. Write the Basic Definition of the time Study.
2. What are the various Methods of Performance Rating?
3. What are the factors affecting make or buy decision?
4. Write Basic Formula of Break Even Point.

**PART – C**

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

4 x 3 = 12

1. What are the merits of Make or buy decision?
2. Elaborate Manual Process Planning.
3. What are the advantages of Computer Aided Process Planning?
4. Difference between cost control and Cost Reduction.
5. What is Value Analysis?

**PART – D**

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

2 x 5 = 10

1. What are the factors affecting Selection of the Product?
2. What are the factors influencing choice of the Machinery?
3. What are the 18 kinds of Therbligs Motion?

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FIFTH SEMESTER EXAMINATION – JANUARY - 2022

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

Max. Marks: 60  
Date : 07.01.2022  
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

30 x 1 = 30

1. TQM stands for \_\_\_\_\_  
a) Total Quality Motion      b) True Quality Management  
c) Total Quality Management      d) None of the Above
2. What is the aim of fool proofing technique used for total quality management?  
a) to achieve zero defects      b) to specify time schedules  
c) to specify targets      d) none of the above
3. What does "T" stand for in SWOT analysis?  
a) Technology      b) Time      c) Threats      d) Team
4. The basic functions of an MRP system include –  
a) Inventory Control      b) Bill of material processing  
c) Elementary Scheduling      d) All of the above
5. MRP stands for -  
a) Minimum Retail Price      b) Material Requirement Planning  
c) Manufacture Resource Point      d) None of the above
6. In ISO, the focus is on –  
a) Enhancing customer satisfaction      b) Satisfying customers  
c) Delighting customers      d) All of the above
7. Quality circle can solve problems related to –  
a) Cost Cutting      b) Continuous improvement in the work areas  
c) Delay in production      d) All of the above
8. Which of the following is responsible for quality objective?  
a) Top level management      b) Middle level management  
c) Lower level management      d) All of the above
9. Management is:  
a) The science of polymer product      b) An art of getting things done  
c) Commerce of making profit      d) None of the above
10. Administration focuses on making the best utilisation of the organisational \_\_\_\_\_.  
a) Talent      b) Resources      c) Finances      d) none of the above
11. Performance Appraisal is –  
a) The process of de-motivating an employee  
b) The process of measuring and evaluating an employee's behaviour and performance.  
c) The process of demotion of an employee  
d) None of the above
12. What does the letter "R" in HRM mean –  
a) Race      b) Resonance      c) Resource      d) Relation
13. 'Planning' is the \_\_\_\_\_ function of management  
a) primary      b) secondary      c) auxiliary      d) none of the above
14. Which one is not a recognised key skill of management?  
a) Conceptual skills      b) Human skills      c) Technical skills      d) Writing skills
15. Which of the following is the method of training?  
a) Demonstration      b) Lectures      c) Conferences/Seminar      d) All of the above
16. \_\_\_\_\_ is the Japanese term for error-proofing.  
a) KANBAN      b) KAIZEN      c) POKA-YOKE      d) All of the above
17. TQM focuses on \_\_\_\_\_.  
a) supplier & customer      b) employee & customer  
c) supplier & employee      d) None of the above
18. Improper recruitment, selection and placement in industries is a \_\_\_\_\_ cause of accident.  
a) environmental      b) technical      c) personnel      d) None of the above

19. \_\_\_\_\_ Management is the process of reaching organisational goals by working with and through people and other organisational resources.  
 a) Financial      b) Environmental      c) Industrial      d) none of the above
20. Which of the following inventory techniques uses cards to monitor inventory movement?  
 a) ABC Analysis      b) JIT Approach      c) Kanban      d) Kaizen
21. A Systematic evaluation of an employee's performance on the job is called "Merit Rating".  
 Say True or False
22. MRP is a production planning, scheduling & Inventory control used to manage manufacturing process- Say True or False.
23. GST is a direct tax. Say True or False
24. Follow up is part of production planning and control activity. Say True or False
25. Management is the process of work that the direction of group of people towards organizational objectives.
26. S W O T stands for \_\_\_\_\_
27. GST Stands for \_\_\_\_\_
28. KRA Stands for \_\_\_\_\_
29. TNI Stands for \_\_\_\_\_
30. MIS Stands for \_\_\_\_\_

**PART – B**

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

4 x 2 = 8

1. Definition of Planning.
2. What is merit rating?
3. What are the traits of a good manager?
4. Write the benefits of ISO 9000 certification.

**PART – C**

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

4 x 3 = 12

1. Explain the functions of HR Department.
2. Write short notes on MRP.
3. Explain 5s principles of TQM
4. What is Entrepreneurship? Mention any 5 qualities of entrepreneur.
5. What is ISO 9000? Write registration step of ISO.

**PART – D**

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

2 x 5 = 10

1. Explain Concept of HR Management and requirements of manpower planning.
2. Explain the steps required to start a small-scale Industry.
3. Explain function of management.

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