COMPUTER NUMERICAL CONTROL

MULTIPLE CHOICE QUESTIONS

1. **What does CNC stand for?**

a. Computerized Numerical Control
b. Controlled Numerical Command
c. Central Numerical Control
d. Computer Numerical Command
Answer: a. Computerized Numerical Control

2.**Which of the following is a primary benefit of using CNC machines?**

a. Increased labor cost
b. Decreased accuracy
c. Increased productivity
d. Decreased automation
Answer: c. Increased productivity

3.What type of programming is commonly used in CNC machines?

a. Java
b. Python
c. G-code
d. HTML
Answer: c. G-code

4.**In CNC terminology, what does the term 'axis' refer to?**

a. The type of material used
b. The direction of movement
c. The speed of the spindle
d. The type of tool used
Answer: b. The direction of movement

5.**Which component of a CNC machine is responsible for the actual cutting or machining operation?**

a. Control panel

b. Spindle

c. Worktable

d. Servo motor

Answer: b. Spindle

6.**In CNC machines, what does the term 'feed rate' refer to?** a. The speed at which the tool rotates

b. The rate at which material is removed

c. The speed at which the workpiece is fed to the tool

d. The depth of cut

Answer: c. The speed at which the workpiece is fed to the tool

7.**Which of the following is a common CNC machining operation?**

a. Drilling

b. Milling

c. Turning

d. All of the above

Answer: d. All of the above

8.**What is the primary function of the CNC controller?**

a. To change the tool

b. To move the workpiece

c. To interpret and execute the program commands

d. To cool the cutting area

Answer: c. To interpret and execute the program commands

9.**In CNC programming, what does the 'M' in M-code stand for?**

a. Movement

b. Machine

c. Miscellaneous

d. Main

Answer: c. Miscellaneous

10.**What is the purpose of the coolant in CNC machining?**

a. To lubricate the machine parts

b. To cool down the cutting tool and workpiece

c. To remove chips and debris

d. All of the above

Answer: d. All of the above

11.**Which of the following materials can be machined using CNC machines?**

a. Metals

b. Plastics

c. Wood

d. All of the above

Answer: d. All of the above

12.**What does the 'G' in G-code stand for?**

a. General

b. Geometric

c. Guide

d. Graphical

Answer: b. Geometric

13.**In CNC machining, what is backlash?**

a. The rotation speed of the spindle

b. The clearance between the machine parts

c. The error in the movement due to the play between the lead screw and the nut

d. The speed at which the workpiece is moved

Answer: c. The error in the movement due to the play between the lead screw and the nut

14.**Which of the following is a type of CNC machine?**

a. CNC lathe

b. CNC mill

c. CNC router

d. All of the above

Answer: d. All of the above

15.**What is the function of a CNC machine's tool changer?**

a. To change the speed of the spindle
b. To change the cutting tool automatically
c. To move the workpiece
d. To adjust the coolant flow
Answer: b. To change the cutting tool automatically

16.**Which coordinate system is commonly used in CNC programming?** a. Cartesian coordinate system
b. Polar coordinate system
c. Cylindrical coordinate system
d. Spherical coordinate system
Answer: a. Cartesian coordinate system

17.**What does the term 'zero point' refer to in CNC machining?**

a. The starting point of the tool path
b. The maximum speed of the spindle
c. The point of maximum depth of cut
d. The end point of the tool path
Answer: a. The starting point of the tool path

18.**Which software is often used to create CNC programs?**

a. CAD software
b. CAM software
c. Both a and b
d. None of the above
Answer: c. Both a and b

19.**What is the purpose of a CNC machine's homing sequence?**

a. To set the machine's origin point
b. To cool down the machine
c. To lubricate the machine parts
d. To change the cutting tool
Answer: a. To set the machine's origin point

20.**Which of the following describes 'interpolation' in CNC machining?**

a. The method of calculating intermediate points for smooth movement
b. The process of changing tools
c. The process of setting the feed rate
d. The process of cooling the workpiece
Answer: a. The method of calculating intermediate points for smooth movement

21.**What does CNC stand for?**

a) Computer Numerical Control

b) Computer Network Control

c) Central Numerical Control

d) Central Network Control

Answer: a) Computer Numerical Control

22.**Which component of a CNC machine is responsible for interpreting the design and converting it into machine language?**

a) Control unit

b) Servo motor

c) Spindle

d) Cutting tool

Answer: a) Control unit

23. **What is the primary purpose of G-code in CNC machining?**

a) To define the geometric shape of the workpiece

b) To control the electrical components

c) To provide commands to move the machine tool

d) To measure the dimensions of the workpiece

Answer: c) To provide commands to move the machine tool

24.**Which of the following materials can be machined using CNC technology?**

a) Metals

b) Plastics

c) Wood

d) All of the above

Answer: d) All of the above

25.**What does the M-code in CNC programming generally control?**

a) Tool movement

b) Machine functions like coolant and spindle

c) Workpiece dimensions

d) Electrical circuits

Answer: b) Machine functions like coolant and spindle

26.**Which CNC machine component is responsible for the actual cutting of the material?**

a) Spindle

b) Control unit

c) Servo motor

d) Tool changer

Answer: a) Spindle

27.**In CNC machining, what is the purpose of a tool changer?**

a) To switch off the machine

b) To change the cutting tools automatically

c) To move the workpiece

d) To monitor the cutting process

Answer: b) To change the cutting tools automatically

28.**Which axis in a CNC machine typically represents vertical movement?**

a) X-axis

b) Y-axis

c) Z-axis

d) W-axis

Answer: c) Z-axis

29.**In CNC milling, which part holds the workpiece in place?**

a) Spindle

b) Chuck

c) Fixture or vice

d) Tool holder

Answer: c) Fixture or vice

30.**What is the role of a servo motor in a CNC machine?**

a) To control the electrical power supply

b) To move the machine components with precision

c) To cool down the system

d) To provide cutting tools

Answer: b) To move the machine components with precision

31.**What does CAD stand for in the context of CNC machining?**

a) Computer-Aided Design

b) Computer-Automated Design

c) Control-Aided Design

d) Central-Automated Design

Answer: a) Computer-Aided Design

32.**Which type of CNC machine is specifically designed for drilling, tapping, and boring operations?**

a) CNC lathe

b) CNC router

c) CNC mill

d) CNC drilling machine

Answer: d) CNC drilling machine

33.**What is a common advantage of using CNC machines over manual machines?**

a) Higher precision and accuracy

b) Lower setup costs

c) No need for skilled operators

d) Limited to specific materials only

Answer: a) Higher precision and accuracy

34.**Which term refers to the removal of material in CNC machining?**

a) Additive manufacturing

b) Subtractive manufacturing

c) Formative manufacturing

d) Generative manufacturing

Answer: b) Subtractive manufacturing

35.**What is the primary function of a CNC lathe?**

a) Cutting complex shapes out of sheet metal

b) Rotating a workpiece to perform various operations such as cutting, sanding, and knurling

c) Milling flat surfaces

d) Drilling holes with high precision

Answer: b) Rotating a workpiece to perform various operations such as cutting, sanding, and knurling