

\_\_\_\_\_ Name

**Read each question carefully and circle the letter or statement (a, b, c, d, or e) the best represents the most accurate response. Multiple answers may be selected.**

- 1) Determine three risks to operator health and safety associated with the use of CNC equipment.
  - a) Ejected materials, such as chippings, swarf, broken tools etc
  - b) Entanglement with moving/rotating tools and equipment
  - c) Contact with cutting fluids
  - d) Strains due to manual handling
  
- 2) List four advantages that CNC manufacturing methods have over the use of conventional, or non-CNC equipment.
  - a) Increased productivity
  - b) Repeatability/Uniformity
  - c) Component modification
  - d) Design flexibility
  - e) Reduced lead-time
  
- 3) A \_\_\_\_ motor is a hybrid electric motor with half motor/half position sensor.
  - a) Modal
  - b) Block
  - c) Servo
  - d) Encoder
  
- 4) The place a traveler begins from is called the \_\_\_\_\_.
  - a) Origin
  - b) Cause
  - c) Source
  - d) Foundation
  
- 5) The spindle speed for a typical tool in a program is incorrect and you wish to change it, what CNC word must you change?
  - a) S
  - b) F
  - c) G
  - d) M

- 6) You are running a proven program (one you or someone else has ran before) for the first time in a new setup. You are cautiously allowing the first tool to come into its approach position when you determine that the tool is not going where it is supposed to. It is most likely that:
- a) The program zero designation is incorrect
  - b) The programmed coordinates are not correct
  - c) The spindle speed is incorrect
  - d) The "Dry Run" switch should be turned on
- 7) \_\_\_\_\_ travers is designated by the code G01.
- a) Rapid
  - b) Circular
  - c) Modal
  - d) Linear
- 8) \_\_\_\_\_ interpolation motion causes the cutter's path to travel in an arc.
- a) Rapid
  - b) Circular
  - c) Modal
  - d) Linear
- 9) \_\_\_\_\_ programing was developed to simplify the programing process.
- a) Address
  - b) Modal
  - c) Conversational
  - d) Safe-start
- 10) \_\_\_\_\_ mode provides a blank program screen for entering short programs or single program commands required for machine setup.
- a) MDI
  - b) MCS
  - c) WCS
  - d) DNC

- 11) The Cartesian coordinate system that identifies the location of the origin on the workpiece is called the \_\_\_\_\_.
- a) MDI
  - b) MCS
  - c) WCS
  - d) DNC
- 12) Once tool measurements have been determined, those tool offset measurements are stored in the machines \_\_\_\_\_ offset page.
- a) Work
  - b) Run
  - c) Geometry
  - d) Wear
- 13) \_\_\_\_\_ offsets may be used to compensate and adjust for wear as the tool is used during production.
- a) Work
  - b) Run
  - c) Geometry
  - d) Wear
- 14) \_\_\_\_\_ allows verification of tool paths the tool will take by watching a simulated computer model cut the part on a display screen.
- a) Dry-run
  - b) Safe offset
  - c) Graphic simulation
  - d) Auto mode
- 15) You are running your machine and notice an odd noise coming from your machine. What do you do?
- a) Stop the machine and inspect the tooling and part
  - b) Notify your supervisor
  - c) See if the noise persists when machine is stopped
  - d) None of the above

- 16) Once the production performance is proved satisfactory, the machine is now ready to be run in \_\_\_\_\_ mode.
- a) Edit
  - b) Single-block
  - c) Automatic
  - d) Prove-out
- 17) CNC programming uses what type of coordinate system?
- a) Absolute positioning
  - b) Cartesian
  - c) Incremental positioning
  - d) Polar positioning
- 18) Axis \_\_\_\_\_ buttons and a small rotary handwheel allow manually controlled axis movement for machine movement.
- a) Feed
  - b) Run
  - c) Offset
  - d) Jog
- 19) Which of the following CNC codes deals with a multiple repetitive, rough cutting cycle used for facing operations?
- a) G94
  - b) G76
  - c) G72
  - D) G68
- 20) Which of the following CNC codes relates to "spindle on" counter clockwise at constant surface speed?
- a) N020 T0101
  - b) N 030 G50 X8.500 Z7.500 S3000
  - c) N040 M04 S500 G96
  - d) N200 M05