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| 1. When a CNC lathe is equipped with an automatic tool changer it is called a \_\_\_\_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | turning center | b. | modal center | |  | c. | servo motor | d. | machining center |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 2. CNC mills with an ATC are called \_\_\_\_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | traverse mills | b. | machining centers | |  | c. | turning centers | d. | positioning mills |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 3. The CNC program is created and stored in the \_\_\_\_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | rectangular coordinate system | b. | modal control unit | |  | c. | machine control unit | d. | origin control system |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 4. A(n) \_\_\_\_\_\_\_\_ assembly device consists of a screw and nut assembly with steel balls in place of threads.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | block nut | b. | linear guide | |  | c. | encoder | d. | ball screw |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 5. Most modern CNC machines employ a high-tech modernized version of ways called \_\_\_\_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | linear guides | b. | linear interpolation | |  | c. | modal interpolation | d. | origin guides |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 6. A(n) \_\_\_\_\_\_\_\_ motor is a hybrid electric motor with half motor/half position sensor.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | modal | b. | servo | |  | c. | block | d. | encoder |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 7. A(n) \_\_\_\_\_\_\_\_ works by recording the amount of rotation a motor makes (in degrees).   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | guide | b. | code | |  | c. | encoder | d. | leader |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 8. CNC programming does not use north, south, east, or west to identify distance and direction, but instead a similar system called the \_\_\_\_\_\_\_\_ system.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | absolute positioning | b. | polar coordinate | |  | c. | Cartesian coordinate | d. | incremental positioning |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 9. The place a traveler begins from is called the point of \_\_\_\_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | foundation | b. | origin | |  | c. | cause | d. | source |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 10. The X- and Y-axes of the Cartesian coordinate system divides the system into four separate regions called \_\_\_\_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | dimensions | b. | modals | |  | c. | quadrants | d. | planes |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 11. \_\_\_\_\_\_\_\_ coordinates require that positions be identified by defining both an angle and a distance (like a vector in mathematics).   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Absolute | b. | Incremental | |  | c. | Linear | d. | Polar |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 12. When using \_\_\_\_\_\_\_\_ positioning, the coordinates of all positions will be referenced from the beginning.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | absolute | b. | polar | |  | c. | incremental | d. | conversational |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 13. The \_\_\_\_\_\_\_\_ positioning system specifies a distance from the current position to the next position instead of a location related to the origin.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | rectangular | b. | incremental | |  | c. | circular | d. | absolute |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 14. Programming code that the machine can understand is called \_\_\_\_\_\_\_\_ address.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | word | b. | modal | |  | c. | encoded | d. | traverse |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 15. \_\_\_\_-codes prepare a machine to engage in a particular mode for machining.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | P | b. | C | |  | c. | G | d. | M |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 16. \_\_\_\_\_\_\_\_ traverse is designated by the code G0.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Circular | b. | Linear | |  | c. | Modal | d. | Rapid |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 17. Linear interpolation moves the cutting tool in a(n) \_\_\_\_\_\_\_\_ line path between two points.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | curved | b. | angled | |  | c. | arced | d. | straight |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 18. \_\_\_\_\_\_\_\_ interpolation motion causes the cutter’s path to travel in an arc.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Circular | b. | Linear | |  | c. | Rapid | d. | Modal |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 19. \_\_\_\_-codes are used to turn on and off miscellaneous (auxiliary) functions.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | G | b. | M | |  | c. | F | d. | A |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 20. \_\_\_\_\_\_\_\_ programming was developed to simplify the machine programming process.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Modal | b. | Address | |  | c. | Conversational | d. | Safe-start |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 21. At the very end of each block is a semicolon (;) character called a(n) \_\_\_\_\_\_\_\_ character.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | miscellaneous function | b. | end of block | |  | c. | end of origin | d. | preparatory command |  |  |  | | --- | --- | | *ANSWER:* | b | |