

## Expert Technical Training's "Advanced CNC Milling and Drilling" Quiz Key

Here are the answers to the quiz:

1. What is the maximum rpm you should run a holder if it is unbalanced in a V-tapered spindle?

- 4,000 rpm
- 6,000 rpm
- 8,000 rpm
- 10,000 rpm

2. Unless it has a special design to ensure Z-Axis accuracy, V-tapered tooling should never be run faster than...

- 6,000 rpm
- 8,000 rpm
- 10,000 rpm
- 12,000 rpm

3. Countless tests have proven which of the following tool tapers to be superior in radial and axial stiffness, z-axis repeatability and performance for high speeds?

- CAT
- HSK
- BT
- SK

4. You should never use a cutter that has \_\_\_\_\_ in a hydraulic holder, a milling chuck or in high speed applications.

- Weldon flats
- Hybrid coatings
- Multiple inserts
- Through-spindle coolant

5. One of the key limiting factors of a C-frame mill design is...

- Workpiece visibility
- Top-end rpm
- Tool-magazine capacity
- Y-axis rigidity

6. What is the name of the rotational axis that corresponds with the Y-linear axis?

- A-axis
- B-axis
- C-axis
- W-axis

7. The machine \_\_\_\_\_ plays a key role in isolating and absorbing vibrations and shock from the cutting operation on the machine as well as surrounding impacts on the shop floor.

- Column
- Frame
- Ways
- Foundation

8. If the \_\_\_\_\_ is too long on a machine, it may whip in the center, causing machine-component- and part-damaging vibrations.

- Linear Guide Way
- Ball Screw
- Rack and Pinion
- Box Way

9. Using a \_\_\_\_\_ in your CAM program eliminates 90 degree corner moves, saving on tool and machine life, as well as increasing part quality.

- Radial Lead-in
- Smoothing-radius
- Collision check
- Radial Step-over

10. A material's machinability rating is a(n) \_\_\_\_\_ value given to a particular material's ease with which it is machined.

- Objective
- Subjective
- Standardized
- Letter

11. \_\_\_\_\_ is a measure of the linear-distance that a single point on the outside edge of the cutter is moved around the circumference as the cutter rotates in one minute.

- Feed rate
- Cutting Speed

- RPM
- Chip load

12. Using (an) \_\_\_\_\_ can destroy the effectiveness and efficiency of a cut when machining ferrous alloys with coated-carbide cutters.

- Flood coolant
- Air blast
- Air/Mist blast
- Chipbreakers

13. When taking a depth of cut that is smaller than the full radius of the cutter, the actual amount of the cutter that is engaged into the workpiece is called the...

- Actual Diameter
- Actual Engagement
- Effective Radius
- Effective Diameter

14. A standard for maximum Length to Diameter (L:D) ratio for normal sized (not micromachining) cutters being held outside the holder, without having to slow rpm and feed, is...

- 2:1
- 3:1
- 4:1
- 5:1

15. \_\_\_\_\_ is a man-made synthetic cutter that has greater thermal resistance than diamond.

- CBN
- CVD
- PCBD
- PCD

16. \_\_\_\_\_ is the secondary ingredient used in tungsten carbide cutters that acts as a binder, and has a dramatic affect on the overall hardness of the carbide itself.

- Aluminum
- Iron-carbide
- Cobalt
- Silicon

17. The \_\_\_\_\_ of the cutter is responsible for generating the essential aluminum-oxide in a high-speed cut in ferrous materials.

- Geometry
- Thickness
- Speed
- Coating

18. To perform high speed machining, all holders and components should be balanced to a rating of \_\_\_\_\_ for the rpm they will be run.

- G1.0
- G1.5
- G2.0
- G2.5

19. High speed machining (which might more appropriately be called “High-Efficiency Machining”) works because the \_\_\_\_\_ and \_\_\_\_\_ are controlled at the point of cut.

- Heat, Vibration
- RPM, Feed rate
- Loads, Limits
- Time, Temperature

20. High-speed machining begins at 8,000 rpm and 100 ipm.

- True
- False