Department of Mechanical Engineering

ME 8451 MANUFACTURING TECHNOLOGY –II

Unit I - MCQ Bank

UNIT I – THEORY OF METAL CUTTING- MCQ Bank

1. In machining of a workpiece, the material is removed by_____

A. drilling action

B. melting action

C. shearing acting

D. using brittleness of the material

Answer: (C)

2. Hobbing process is also used for which of the following application?

A. Punching

B. Metal bending

C. Rust removal

D. Sprocket cutting

Answer: (D)

3. Hobbing is a special type of which of the following?

A. Casting

B. Grinding

C. Drilling

D. Milling

Answer: (D)

4. What is broaching?

A. A machining process used for increasing the size of the existing hole

B. A machining process used for grinding hardened steel

C. A machining process used for making intricate holes accurately

D. A machining process for removal of a layer of material of desired width and depth

Answer: (D)

5.Cast iron during machining produces

A. continuous chips

B. discontinuous chips

C. continuous chips with built-up-edge

D. none of these

Answer: (B)

6. A single point thread cutting tool should ideally have

A. zero rake angle

B. positive rake angle

C. negative rake angle

D. point angle

Answer: (A)

7.The tool made of cemented carbide wear out faster at

A. slow speeds

B. medium speeds

C. fast speeds

D. very fast speeds

Answer: (A)

8.Segmental chips are formed during machining

A. mild steel

B. cast iron

C. high-speed steel

D. high carbon steel

Answer: (B)

9.Drilling is an example of

A. oblique cutting

B. orthogonal cutting

C. side cutting

D. uniform cutting

Answer: (B)

10. When the cutting edge of the tool is dull, then during machining

A. continuous chips are formed

B. discontinuous chips are formed

C. continuous chips with a built-up edge are formed

D. no chips are formed

Answer: (C)

11. The rake angle required to machine brass by high-speed steel tool is

A. 0

B. 20

C. 40

D. 110

Answer: (A)

12. The lip angle of a single point tool is usually

A. 20° to 40°

B. 40° to 60°

C. **60° to 80°**

D. none of these

Answer: (C)

13. Small nose radius

A. increases tool life

B. decreases tool life

C. produces chipping and decreases tool life

D. **results in excessive stress concentration and greater heat generation**

Answer: (D)

14. The lip angle is the angle

A. **between the tool face and the ground end surface of the flank**

B. made by the face of the tool and the plane parallel to the base of the cutting tool

C. between the face of the tool and a line tangent to the machined surface at the cutting point

D. none of the above

Answer: (A)

15. High-speed steel has an excessive wear on_____

A. castings

B. hard materials

C. **casting and hard materials both**

D. none of the mentioned

Answer: (C)

16. Carbides are used in_____

A. rapid stock removal

B. higher speeds

C. rapid stock removal and higher speed both

D. none of the mentioned

Answer: (C)

17.For general purpose, which type of cutting tool is used in lathe?

A. single point

B. multi-point

C. two point

D. none of the mentioned

Answer: (A)

18.The angle between the rake face and plane perpendicular to rake face is known as:

A. Side rake angle

B. Side relief angle

C. End relief angle

D. Back rake angle

Answer: (A)

19. The angle between the rake face flank of tool and perpendicular line drawn from cutting point to base of tool is known as:

A. Side rake angle

B. Side relief angle

C. End relief angle

D. Back rake angle

Answer: (B)

20. Angle between side cutting edge and axis of tool is known as:

A. Side rake angle

B. Side relief angle

C. Side cutting edge angle

D. Back rake angle

Answer: (C)

21. The angle between end cutting edge and axis of the tool is known as:

A. Side rake angle

B. Side relief angle

C. End cutting edge angle

D. Back rake angle

Answer: (C)

22.The angle between side cutting edge and end cutting edge in the top surface plane of tool.

A. Side rake angle

B. Side relief angle

C. Side cutting edge angle

D. Nose angle.

Answer: (D)

23. With an increase in rake angle of the tool, tool life will

A. Increase

B. Decrease

C. Remains constant

D. First, increase then decrease

Answer: (D)

24. What is the optimum value of side cutting edge in degrees for maximum tool life?

A. 20^0

B. 22^0

C. 25^0

D. **30^0**

Answer: (D)

25. Which of the following is correct about the chip thickness ratio 'r'?

A. **r<1**

B. r=1

C. r>1

D. None of the mentioned

Answer: (A)

26. Which of the following assumption is not valid for the merchant circle diagram?

A. Continuous Chips

B. **Discontinuous chips**

C. Cutting edge remains sharp

D. No built-up edge

Answer: (B)

27. Which of the following is the correct equation for shear force FS=? where "φ" is the shear angle?

A. **Fs=Fc cosφ - Ft sinφ**

B. Fs=Fc cosφ / Ft sinφ

C. Fs=Fccosφ * Ft sinφ

D. Fs=Fc cosφ + Ft sinφ

Answer: (A)

28. Which of the following will have a maximum amount of chips during machining?

A. **Ductile material**

B. Brittle material

C. Cast iron

D. None of the mentioned

Answer: (A)

29.Thermal cracking of tools occurs at

A. Low temperature

B. **High temperature**

C. Low cutting speed

D. None of the mentioned

Answer: (B)

30. In the orthogonal cutting of metals _____

A. **the cutting edge of the tool is perpendicular to the direction of tool travel**

B. the cutting forces occur in one direction only

C. the cutting edge is wider than the depth of cut

D. all of the mentioned

Answer: (A)