Department of Mechanical Engineering
Production Process-II
Second Year Fourth Semester (CBCGS)

1. Friction at the tool-chip interface can be reduced by
(A) Decreasing the rake angle   (B) Increasing the depth of cut
(C) Decreasing the cutting speed   (D) **Increasing the cutting speed**

2. Minimum shear strain in orthogonal turning with a cutting tool of zero rake angle is
(A) 0.0   (B) 0.5
(C) 1.0   (D) **2.0**

3. In a single point turning tool, the side rake angle and orthogonal rake angle are equal. ϕ is the principal cutting edge angle and its range is $0^0 >= \phi >= 90^0$. The chip flows in the orthogonal plane. The value of ϕ is closest to
(A) 0 Degree   (B) 45 Degree
(C) 60 Degree   (D) **90 Degree**

4. In orthogonal turning of a low carbon steel bar of diameter 150 mm with uncoated carbide tool, the cutting velocity is 90 m/min. The feed is 0.24 mm/rev and the depth of cut is 2mm. The chip thickness obtained is 0.48 mm. If the orthogonal rake angle is zero and the principle cutting edge angle is 90 Degree, the shear angle in degree is
(A) 20.56   (B) **26.56**
(C) 30.56   (D) 36.56

5. In orthogonal turning of low carbon steel pipe with principal cutting edge angle of 90 Degree, the main cutting force is 1000 N and the feed force is 800 N. The shear angle is 25 Degree and orthogonal rake angle is zero. Employing Merchant's Theory, the ratio of friction force to normal force acting on the cutting tool is
(A) 1.56   (B) 1.25
(C) **0.80**   (D) 0.64

6. In an orthogonal cutting test on mild steel, the following data were obtained
Cutting speed : 40 m/min
Depth of cut : 0.3 mm
Tool rake angle : +5 Degree
Chip thickness : 1.5 mm
Cutting force : 900 N
Thrust force : 450 N
Using Merchant's analysis, the friction angle during the machining will be
(A) 26.6 Degree (B) **31.5 Degree**
(C) 45 Degree (D) 63.4 Degree

7. During orthogonal cutting of mild steel with a 10 Degree rake angle, the chip thickness ratio was obtained as 0.4. The shear angle (in degree) evaluated from this data is
(A) 6.53 (B) 20.22
(C) **22.94** (D) 50.00

8. Thrust force will increase with increase in

(A) Side cutting edge angle (B) Tool Nose radius

(C) Rake Angle (D) End Cutting Edge Angle

9. In a single point turning operation with cemented carbide and steel combination having a Taylor Exponent of 0.25 , if the cutting speed is halved then the tool life will become

(A) Half (B) Two Times

(C) Eight Times (D) **Sixteen Times**

10**.** The angle between the face and the flank of the single point cutting tool is known as

(A) Rake Angle (B) Clearance Angle

(C) Lip Angle (D) Point Angle

11. Single point thread cutting tool should ideally have

(A) Zero Rake Angle (B) Positive Rake Angle

(C) Negative Rake Angle (D) Normal Rake Angle

12. The rake angle in a twist drill

(A) Varies from minimum near the dead centre to a maximum value at the periphery

(B) Is maximum at the dead centre and zero at the periphery

(C) Is constant at every point of the cutting edge

(D) Is a function of the size of the chisel edge.

13. Internal Gears are made by

(A) Hobbing   **(B) Shaping with pinion cutter**

(C) Shaping with rake cutter   (D) Milling

14. Removing dull grains in order to make grinding wheel sharp is known as
(A) Loading   (B) Glazing
(C) **Dressing**   (D) Trueing

15. Operation done to make periphery of grinding wheel concentric with its axis to recover its lost shape is known as
(A) Loading   (B) **Glazing**
(C) Dressing   (D) Trueing

16. How many rotational motions are observed when workpiece is in space
(A) 9   **(B) 12**

(C)3   (D) 6

17. Maximum area of contact is observed in

(A) Conical Pins   **(B) Cylindrical Pins**

(C) Jack Pins   (D) Support Pins

18. To confine cylindrical objects which of the following is used

(A) Support Pins

(B) Heel Clamps

(C) Clamps

(D) Blocks

19. Locating pillars , drill bushes , drilling jigs are component of

(A) Fool Proofing System

(B) Template Jig

(C) Milling Fixture

(D) Built Up Feet

20. When periodical replacement of bushes expected which one of the following is used

(A) Renewable Bush

(B) Press Fit Bushes

(C) Linear Bushes

(D) Turning Bush

21. Magnetic chucks are used when

(A) Material is ferrous

(B) Material is ductile

(C) Material is plastic

(D) Material is tensile

22. Proper sequence of operation is attained using

(A) Jig Feet

(B) 3-2-1 Principle

(C) Indexing Devices

(D) Stable Mechanism

23. The utility of jigs and fixtures can be raised by

(A) Applying quick return mechanism

(B) Applying Automation

(C) By adequate modification

(D) None of these

24. Manufacturing may produce these types of products

(A) Discrete or continuous

(B) Raw Material or Parts

(C) Machinery or manufactured

(D) Processes or Operations

25. Approximately this much of the cost of product development and manufacture is determined at the design stage:

(A) 40-50%   (B) 60-75%

(C) 70-80%   (D) 75-85%