027/2025

Maximum : 100 marks

Time : 1 hour and 30 minutes

- **1.** Web chisels are used for :
 - (A) Squaring the materials at corners
 - (B) Cutting keyways and grooves
 - (C) Separating metals after chain drilling
 - (D) Chip off excess metals after welding
- 2. If the clearence angle is too large , chisel will :
 - (A) Slip from the workpiece
 - (C) Break
- **3.** Rasp cut file are available only in :
 - (A) Round shape
 - (C) Half round shape
- 4. What is the name of the part marked as 'X?

- (B) Dig into the workpiece
- (D) Cannot penetrate into the work
- (B) Rectangular shape
- (D) Square shape



- (A) Spindle
- (C) Clamping nut

- (B) Scriber
- (D) Snug
- 5. Which type of vice is used for marking of small jobs on the surface plate?
 - (A) Tool makers vice (B) Pin vice
 - (C) Quick release vice (D) Bench vice
- 6. The method used to remove a broken tap from precision component without damaging it :
 - (A) Using tap extractor

- (B) By anealing and drilling
- (C) By using Tapered square drift
- (D) Using spark erosion

- 7. The cutting edges of unequal length of drill causes :
 - Drill to be break easily (A)
 - (C) Over sized drill hole

(A)

- 8. Recommended cutting fluids used for drilling cast iron :
 - Kerosene (B) Dry or compressed air

(B)

(D)

- (C) Water (D) None of these
- 9. Calculate the r.p.m. for a high speed steel drill ϕ 22 mm to cut mild steel. The cutting speed for MS is taken as 25 m/min :
 - (A) 382 280(B) (C) 175(D) 362
- 10. The size of the drill is determined and governed by :
 - (A) Diameter over the lands
 - (C) Diameter of flank (D)
- 11. What will happen if the carriage is not being locked while facing?
 - (A) Concave face (B)
 - (C) Pip at the centre
- What is the name of the centre shown in fig? 12.

(B)

- (A) Inserted type centre
- (C) Self driving centre (D) Tipped centre
- Which part of the lathe gives angular movement to the tool? 13.
 - (A) Cross slide (B) Carriage
 - Tailstock (C) Compound slide (D)
- 14. Which part of the lathe contains mechanism for the moving and controlling of the lathe carriage?
 - (A) Top slide (B) The apron
 - (C) Cross slide (D) Compound slide
- 15. The crown wheel of three jaw chuck is made of :
 - (A) High carbon steel (B) Cast iron
 - (D) (C) Alloy steel Brass
- 16. Which is the example of ferrous tool material?
 - High speed steel Ceramics (A) (B)
 - (C) Stellite (D) Diamond
- 027/2025

Insufficient clearence angle

Under sized drill hole

- (B) Diameter over the shank
- Thickness of web
- Convex face (D)

Half centre

None of the these

Α

17.	A tumbler	gear mechanism consists of :		
	(A)	2 gears	(B)	4 gears
	(C)	1 gear	(D)	3 gears
18.	The tool n	naterial which has very low he	at conductivity	and used without coolant is :
	(A)	Stellite	(B)	Ceramics
	(C)	Cemented carbides	(D)	High carbon steel
19.	Calculate	the cutting speed for turning a	a workpiece of	$\phi~30~\mathrm{mm}$ rotating at $450~\mathrm{RPM}$:
	(A)	42 m/min	(B)	45 m/min
	(C)	35 m/min	(D)	25 m/min
20.	Which typ	be of thread cut on the screw sh	aft of an indep	endent chuck?
	(A)	Left hand V thread	(B)	Right hand V thread
	(C)	Left hand square thread	(D)	Left hand acme thread
21.	Determin vernier di	e the least count when one p vision equal to 9/10 :	main scale div	vision is equal to 1 mm and one
	(A)	0.01 mm	(B)	0.10 mm
	(C)	1.00 mm	(D)	0.001 mm
22.	On which	part of micrometer the datum	line and gradu	ations are marked?
	(A)	Thimble	(B)	Frame
	(C)	Barrel	(D)	Anvil
23.	The minir	num measurement that can be	correctly read	with a vernier caliper is called:
	(A)	Least count	(B)	Zero reading
	(C)	Main scale reading	(D)	Zero error
24.	The micro	ometer spindle will have pitch o	of:	
	(A)	0.75 mm	(B)	0.25 mm
	(C)	1.00 mm	(D)	0.50 mm
25.	Ratchet st	top in the micrometer helps to:		
	(A)	Control the pressure	(B)	Hold the work piece
	(C)	Adjust zero error	(D)	Lock the spindle
26.	Formula VSD=Ver:	to determine least count of Ve nier Scale Division):	ernier caliper (where MSD =Main Scale Division
	(A)	1 MSD - 1 VSD	(B)	1 MSD + 1 VSD

(C) 1 MSD - 2 VSD (D) $\frac{1 \text{ MSD}}{2 \text{ VSD}}$

27. The accuracy of digital vernier caliper is:

(A)	0.02 mm	(B)	0.001 mm
(C)	0.05 mm	(D)	0.01 mm

28. In a micrometer, the zero of the thimble rest below the datum line of the sleeve the error is called as:

(A)	Positive error	(B)	No zero error
(C)	Negative error	(D)	Zero error

29. What is the least of an outside micrometer having 50 divisions on thimble and pitch of screw in 0.5 mm?

(A)	0.001 mm	(B)	0.05 mm
(C)	0.01 mm	(D)	0.02 mm

- **30.** The spindle of an outside metric micrometer has got a fine pitch thread. What is the relationship between the pitch of the thread and the thimble revolution?
 - (A) One revolution of thimble = pitch of thread
 - (B) Two revolution of thimble = pitch of thread
 - (C) One revolution of thimble = $2 \times \text{pitch of thread}$

pitch of thread

- (D) One revolution of thimble = 2
- **31.** Difference in measurement between the machined and the un-machined diameter is known as :
 - (A) Depth of cut (B) Machining time
 - (C) $2 \times \text{Depth of cut}$ (D) Feed

32. Which type of micrometer used to check the pitch diameter of a screw rod?

- (A) Tube micrometer (B) Flange micrometer
- (C) Screw thread micrometer (D) Digital micrometer
- 33. Which range of cutting speed is set for drilling a mild steel using HSS drill?
 - (A) 70 100 m/min (B) 20 30 m/min
 - (C) 25 40 m/min (D) 35 50 m/min

34. Measuring errors which are due to the measuring instrument are known as :

- (A) Gauge and Instrument errors (B) Observation errors
- (C) Random errors (D) Systematic errors
- **35.** The rate at which the drill advances into the material for each rotation of the drill is termed as :
 - (A) Depth of cut (B) Cutting Speed
 - (C) Feed (D) RPM

36.	3. Which process is used for enlarging and truing an existing drilled or cored hole wit single point tool?			isting drilled or cored hole with a
	(A)	Boring	(B)	Punching
	(C)	Reaming	(D)	Drilling
37.	Chamferi	ng end of hole to 120° is meant for :		
	(A)	Deburring	(B)	Threading
	(C)	Riveting	(D)	Self tapping screw
38.	The Num	ber drill is specified :		
	(A)	A - Z	(B)	1 - 50
	(C)	0 - 80	(D)	1 - 80
39.	Which fac	tor decides the point angle of a drill	?	
	(A)	Diameter of the drill	(B)	Material of the drill
	(C)	Material to be drilled	(D)	Type of the drilling machine
40.	It is a ma opening o	chining operation for producing a f f a drilled hole :	lat seat f	or bolt head, washer or nut at the
	(A)	Boring	(B)	Spot facing
	(C)	Counter boring	(D)	Counter sinking
41.	What is K	Inurling?		
	(A)	Cutting operation	(B)	Grinding Operation
	(C)	Pinning operation	(D)	Forming operation
42.	Coarse kr	urling is done by using coarse pitche	ed knurls	of
	(A)	1.94 mm	(B)	1.75 mm
	(C)	2.94 mm	(D)	.75mm
43.	Which is t	the wrong statement about propertie	es of a goo	od cutting fluid?
	(A)	It should have a high evaporation	rate	
	(B)	It should be sufficiently viscous		
	(C)	It should not corrode the workpiece	e or mach	line
	(D)	None of these		
44.	Which me parts of th	ethod is employed for the gears and ne gears actually dipping in the oil?	l bearing	s inside all gear drives, the lower
	(A)	Gravity feed method	(B)	Force feed method
	(C)	Splash method	(D)	Oil gun method
45.	Split bush	ning mandrel is a example of	man	drel.

- (A) Gang Mandrel (B) Cone mandrel
- (C) Expansion mandrel (D) Plain mandrel

7

46.	Which term denotes the algebraic difference between a size, to its corresponding basic size, It may be positive, negative or zero?			
	(A)	Upper limit	(B)	Tolerance
	(C)	Actual size	(D)	Deviation
47.	Which is t	he false statement about the advantage	es of t	he limit system?
	(A)	Interchangeability assured		
	(B)	Necessary to employ highly skilled op	erator	'S
	(C)	Not necessary to use conventional mea	asurir	ng instruments
	(D)	Comparatively lesser time for manufa	cturir	ng than conventional method
48.	In the BIS which are	S system of limits and fits, all external not cylindrical are designated	featu	res of a component including those
	(A)	Shaft basis system	(B)	Hole basis system
	(C)	Shaft	(D)	Hole
49.	Which of f	it is H7-p6?		
	(A)	Clearence Fit	(B)	Interference fit
	(C)	Transition fit	(D)	Intermediate fit
50.	Which acc	essory has elongated slots and 'T' slots'	?	
	(A)	Face plate	(B)	Driving plate
	(C)	Angle plate	(D)	Catch plate
51.	Large, fla clamped t	t, irregular shaped workpieces, cast o a for various turning operations	ings, ations	jigs and fixtures may be firmly s.
	(A)	Catch plate	(B)	Faceplate
	(C)	Safety Driving plate	(D)	Magnetic chuck
52.	Where is f	follower steady can be clamped on?		
	(A)	Lathe bed	(B)	Swivel base
	(C)	Apron	(D)	Saddle
53.	Which Fu	ndamental deviations for fine mechanis	sms ai	re added later?
	(A)	CD, EF and FG	(B)	CD, EF and FH
	(C)	AD, EE and FG	(D)	AD, EF and FH
54.	Tool setting	ng on British type tool post requires gre is needed to give a grip on the f	ater s ull wi	kill in clamping as the adjustment dth of the tool.
	(A)	Rack	(B)	Lever
	(C)	Nut and screw	(D)	Heel pin
55.	Which Lat	the centre has serrated grooves?		
	(A)	Self driving live centre	(B)	Swivel v type centre
	(C)	Insert type centre	(D)	Tipped type centre

027/2025

Α

- **56.** Which one of the following is not a method of taper turning?
 - (A) Form tool method

(B) Conical feed method

Tail stock set over method

- (C) Combining feed method
- **57.** A taper 1:20 signifies :
 - (A) 1 unit change in length per 20 unit change in diameter
 - (B) initial diameter must be 1 unit and final diameter must be 20 unit

(D)

- (C) 1 unit diameter change per 20 unit length
- (D) for every 20 unit length there will be a change in diameter of 1 unit
- **58.** Long work pieces with a small angle of taper are usually turned by setting over the tailstock Centre. The angle of taper mentioned here is :
 - (A) not exceeding 8° (B) not exceeding 10°
 - (C) not exceeding 5° (D) not exceeding 12°
- **59.** If 'D' is the larger diameter of taper and 'd' is the smaller diameter of taper over a length 'l' then in taper turning conicity is designated by :

(A)	$\frac{D-d}{2.l}$	(B)	$\frac{\frac{D}{2} - d}{l}$
(C)	$\frac{D-d/2}{2.l}$	(D)	$\frac{D-d}{l}$

- **60.** If 'D' is the larger diameter of taper and 'd' is the smaller diameter of taper over a length 'l' then by using taper turning attachment the angle of taper ' α ' can be found out by the relation :
 - (A) $\tan \alpha = \frac{D-d}{l}$ (B) $\tan \alpha = \frac{D-d}{2.l}$ (C) $\tan \alpha = \frac{D-2.d}{l}$ (D) $\tan \alpha = \frac{D-d/2}{l}$
- **61.** Let larger diameter 'D' = 90 mm and smaller diameter 'd' = 80 mm, and the conicity or the amount of taper is 1:20, then the length of taper is :

(A)	200 mm	(B)	100 mm
(C)	170 mm	(D)	10 mm

62. Morse tapers are available in ______ sizes.

(A)	6	(B)	7
-----	---	-----	---

- (C) 8 (D) 5
- **63.** In British system which one of the following is not a taper system?
 - (A) Whitworth standard taper
 - (B) Morse standard taper
 - (C) Brown and Sharpe standard taper
 - (D) Jarno standard taper

64. Which one of the following is not a Metric size taper?

(A)	80	(B)	6
(C)	120	(D)	8

- **65.** In taper turning using form tool, it is essential that the tool cutting edge should be set accurately :
 - (A) slightly below not greater than 2 mm below the centre line of the work piece
 - (B) slightly above not greater than 2 mm above the centre line of the work piece
 - (C) on the center line of the work piece
 - (D) slightly inclined on the center line of the work piece to avoid under cutting
- 66. Which one of the following is not a size of Morse taper?

- (C) 3 (D) 6
- **67.** For long workpieces with a small angle of taper having larger diameter 'D' and smaller diameter 'd' over a length 'l' and 'L' is the full length of work piece, then tail stock setting over or offset[h] in British system can be determined from the formula.

(A)
$$h = \frac{L(D-d)}{2.l}$$
 (B) $h = \frac{l(D-d)}{2.L}$
(C) $h = \frac{(D-d)}{2.l}$ (D) None of the above

68. Which one of the following is not an advantage of using taper turning attachment?

- (A) Very steep taper on a long workpiece may be turned
- (B) Accurate taper on large number of workpieces may be turned
- (C) Internal tapers cannot be turned with ease
- (D) The alignment of live and dead centers being not disturbed, both straight and taper turning may be performed on a work piece in one setting without much loss of time
- 69. In combined feed method of taper turning :
 - (A) the tool moves in a diagonal path
 - (B) the tool moves parallel to the center line of work piece
 - (C) At a time only one type of feed is given
 - (D) Longitudinal and cross feeds are done at specific intervals
- **70.** In metric taper sizes the amount of taper or conicity is :
 - (A) 1:19 (B) 1:20
 - (C) 1:19.180 (D) 1:20.047

027/2025

- 71. Change gear train is a train of gears serving the purpose of
 - (i) Connecting the fixed stud gear to the quick-change gearbox
 - (ii) Connecting the fixed stud gear to the tumbler gears.
 - (iii) Connecting the spindle gear to the lead screw
 - (A) Only (i) is correct
 - (B) Only (i) and (ii) are correct Only (ii) is correct (D) Only (ii) and (iii) are correct

(B) Only (ii) is correct

Only (iii) is correct

- 72. To have a different ratio of motion between the headstock spindle and the lead screw during thread cutting
 - Tumbler gear mechanism is used (i)
 - (ii) All geared headstock is used
 - (iii) Change gear train is used

(C)

- (A) Only (i) is correct
- (C) Only (iii) is correct (D) Only (ii) and (iii) are correct
- In a simple gear train there is an idler gear between the driver gear and driven gear 73.
 - which does not affect the gear ratio? (i)
 - (ii) which just ink the driver and the driven gears?
 - (iii) which serves the purpose of getting the desired direction to the driven wheel?
 - (A) Only (ii) and (iii) are correct
 - Only (i) and (iii) are correct (D) All of the above (i), (ii) and (iii) (C)

(B)

- 74. In a simple gear train the driver gear and the driven gear are changed according to:
 - (i) The hand of thread to be cut on the job
 - (ii) The lead of thread to be cut on the job
 - The direction of rotation of lead screw (iii)
 - Only (i) is Correct (B) Only (ii) is correct (A)
 - (C) (D) Only (ii) and(iii) are correct Only (iii) is correct
- 75. Find the change gears required to cut a 3 mm pitch on a job in a lathe having a lead screw of 6 mm pitch:
 - Driver gear 20 teeth, driven gear 40 teeth. (i)
 - (ii) Driver gear 25 teeth, driven gear 50 teeth.
 - (iii) Driver gear 60 teeth, driven gear 120 teeth.
 - (A) Only (i) is correct (B) Only (ii) is correct
 - (C) (D) All of the above (i), (ii) and (iii) Only (iii) is correct
- 76. The factor/factors to be considered for the selection of a thread cutting method is :
 - (i) Type and number of components required.
 - (ii) Accuracy of thread and its surface finish.
 - (iii) Availability of cutting tools.

(C) Only (iii) is correct

- (A) Only (i) and (ii) are correct
- (B) Only (ii) and (iii) are correct
- (D) All of the above (i), (ii) and (iii)

- - 027/2025 [P.T.O.]

Α

- **77.** Helix is:
 - (i) a type of curve generated by a point which moves at a uniform speed parallel to the axis.
 - (ii) a type of curve generated by a point which is moving at a uniform speed around the cylinder/cone and at the same time moves at a uniform speed parallel to the axis.
 - (iii) a type of curve generated by a tool which is moving at a uniform speed around the cylinder.
 - (A) Only (i) is correct (B) Only (ii) is correct
 - (C) Only (iii) is correct (D) All of the above (i), (ii) and (iii)

(B)

(B)

78. Pitch diameter is

- (i) equal to the major diameter minus one depth.
- (ii) equal to the major diameter minus two depth.
- (iii) equal to the minor diameter plus one depth.
 - (A) Only (i) is correct
 - (C) Only (i) and (iii) are correct
- **79.** Pitch diameter of a thread can be measured by :
 - (i) Three wire method
 - (ii) Outside micrometer
 - (iii) Screw thread micrometer
 - (A) Only (i) and (iii) are correct
 - (C) Only (ii) and (iii) are correct
- **80.** The helix angle of a thread can be calculated by the formula:
 - (A) $\tan \alpha = \text{lead} \text{pitch diameter}$
 - (C) $\tan \alpha = \text{lead} + \text{pitch diameter}$
- 81. In a unified thread form :
 - (A) crest is flat and root is rounded-off
 - (B) crest is rounded-off and root is flat
 - (C) crest and root are flat
 - (D) crest and root are rounded-off
- 82. The application of knuckle thread is :
 - (A) valve spindles

hose connections

(B) railway carriage couplings

Only (i) and (iii) are correct

(D) Only (i) and (ii) are correct

(D) All of the above

83. BFS thread :

(C)

- (i) is similar to BSW thread
- (ii) has less number of threads per inch than BSW thread for a particular thread size
- (iii) has more number of threads per inch than BSW thread for a particular thread size

(B)

- (A) Only (i) is correct
- (C) Only (ii) is correct
- 027/2025

(D) $\tan \alpha = \text{lead} / \text{pitch diameter}$

Only (ii) is correct

(B) Only (iii) is correct

(D) All of the above (i), (ii) and (iii)

(D) All of the above (i), (ii) and (iii)

 $\tan \alpha = \text{lead} \times \text{pitch diameter}$

- 84. BSP thread is cut externally with a small taper for the threaded length :
 - (i) avoids leakage in the assembly
 - (ii) provides for further adjustment when slackness is felt
 - (iii) to suit with the internal taper thread.
 - (A) Only (iii) is correct
 - (C) Only (ii) and (iii) are correct
- **85.** Saw tooth thread :
 - (i) is a modified form of Buttress thread
 - (ii) in which the flank taking the load is inclined at an angle of 3°
 - (iii) in which the flank that does not taking the load is inclined at an angle of 30°
 - (A) Only (i) is correct (B) Only (i) and (ii) are correct
 - (C) Only (i) and (iii) are correct (D) All of the above (i), (ii) and (iii)

(B)

Only (i) and (ii) are correct

(D) Only (i) and (iii) are correct

- 86. CNC systems are classified as Open loop and Closed loop control system based on :
 - (A) Feedback control (B) Range of speeds
 - (C) Back lash (D) Chip removal system
- 87. A series of coded information that direct the operations of the CNC machine is called :
 - (A) Machining Instruction (B) Cutting parameter
 - (C) Part program (D) Feedback
- 88. The distance, tool moves along the work for each revolution of the work is called :
 - (A) Feed (B) Cutting Speed
 - (C) Depth of cut (D) Machinability
- 89. According to ISO standard, while specifying inserts, the first letter indicates :
 - (A) Relief angle (B) Shape
 - (C) Cutting edge condition (D) Cutting direction
- **90.** The point at which the cutting tool is positioned is taken as datum point for calculating the coordinate of the next point to which movement is to be made in :
 - (A) Incremental coordinate data input system
 - (B) Polar coordinate system
 - (C) Cartesian coordinate system
 - (D) Absolute coordinate data input system
- **91.** The most significant factor affecting tool life when the work material, tool material and tool shape are chosen for a machining operation is :

13

- (A) Depth of cut (B) Tool shape
- (C) Cutting speed (D) Feed

93.	The toolin	ig system for CNC are designed to :			
	(A)	Eliminate operator error			
	(B)	Maximize productive machine hours			
	(C)	Both (A) and (B)			
	(D)	None of the above			
94.	In CVD co	oated tipped tools, CVD stands for :			
	(A)	Chemical Vapour Deposition	(B)	Coated Vapour Deposition	
	(C)	Chemical Vapour Diamond	(D)	Chemical Vitrified Diamon	
95.	The speed metres pe	d at which the cutting edge passes or minute is :	over th	ne material which is expre	
	(A)	Feed	(B)	Depth of cut	
	(C)	Cutting speed	(D)	Spindle speed	
96.	The difference between machined and unmachined surface is called :				
	(A)	Feed	(B)	Depth of cut	
	(C)	Cutting speed	(D)	Spindle speed	
97.	The tool v	vear increases with :			
	(A)	Increase in Depth of Cut	(B)	Increase in Feed rate	
	(C)	Decrease in Depth of Cut	(D)	Both (A) and (B)	
98.	ATC in C	NC machining stands for :			
	(A)	Advanced Tool Code	(B)	Automatic Tool Changers	
	(C)	Advanced Tool Carrier	(D)	Automatic Tool Centering	
0.0	(D)		1		

Α

- More expensive
- More accurate
- Ineffective (C)

(C)

(A)

(D)

tion mond

- Cutting speed
- In ISO designation system for boring bars, first character represents : Clamping method (A)
 - (C)

92.

- pressed in
- 96.
- 97.

100. As compared to Open loop system, Closed loop system is :

99. The cutting tool lose its original shape with use and passage of time is called :

- (A) Tool wear Tool damage (B)
 - Tool life Form tools (D)
- (B)
 - Both (A) and (B)

(B) Clearance angle (D) Insert shape

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK