



INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI

भारतीय प्रौद्योगिकी संस्थान तिरुपति



Yerpedu – Venkatagiri Road, Yerpedu Post, Tirupati District, A.P – 517619

Examination for Non-Teaching Positions
Adv. No. IITT/STAFFREC/02/2023 dated 23.08.2023

Junior Technician – Central Workshop (machinist)

Maximum Marks: 40

Time: 45 Minutes

Candidate Name	
Post Serial Number	
Signature of Invigilator	

General Instructions:

Please read the following instructions carefully:

1. This test booklet contains 40 questions. Each Question carries 1 mark. Each question comprises four answers. You will select the answers which you want to mark on the answer sheet.
2. You have to mark only one answer otherwise it will be counted as wrong answer.
3. Use blue/black ink ball point pen for darkening the circles on the OMR answer sheet only. Do not use Pencil.
4. Folding, wrinkling or putting any unwanted mark or damaging the OMR answer sheet is prohibited. The candidate will be responsible for invalidation of the OMR answer sheet by doing such deeds.
5. Any kind of electronic devices, including smart watches, mobiles, calculators, and/or any paper chits, letters or printouts are not allowed inside the examination hall.
6. You have to hand-over the answered OMR sheet and the test booklet to the invigilator after the examination.

1. Which type of line is part of a dimension?
 - (a) Break lines
 - (b) Phantom lines
 - (c) Extension lines
 - (d) Cutting plane lines
2. A circle will appear on an isometric drawing as an _____.
 - (a) ellipse
 - (b) cycloid
 - (c) circle
 - (d) parabola
3. The curve generated by a point on the circumference of a circle, which rolls without slipping along outside of another circle is known as
 - (a) Hypocycloid
 - (b) Epicycloid
 - (c) Cycloid
 - (d) Trochoid
4. If a line is inclined to H.P., its plan will _____.
 - (a) be perpendicular to XY line
 - (b) be parallel to XY line
 - (c) show the true length
 - (d) None of the above
5. Depending on its relationship to the projection plane on which the view is projected, a line may project:
 - (a) true length
 - (b) foreshortened
 - (c) as a point
 - (d) all of the above
6. A twist drill is a
 - (a) A side cutting tool
 - (b) A front cutting tool
 - (c) An end cutting tool
 - (d) None of these
7. V block is used to hold
 - (a) Flat object
 - (b) Round object
 - (c) Triangular
 - (d) None
8. Cutting fluids are used to
 - (a) Cool the tool
 - (b) Improve surface finish
 - (c) Cool the workpiece
 - (d) All of these
9. In up milling the workpiece is fed
 - (a) Against the rotating cutter
 - (b) At angle of 60° to the cutter
 - (c) In the direction of the cutter
 - (d) At the right angle to the cutter
10. The ductile materials, during machining, produce
 - (a) Continuous chips
 - (b) Discontinuous chips
 - (c) Continuous chips with built up edge
 - (d) Either (a) or (c)
11. The type of tool used on grinding machine is
 - (a) Single point cutting tool
 - (b) Two point cutting tool
 - (c) Three point cutting tool
 - (d) Multi-point cutting tool
12. The chamfering is an operation of
 - (a) Beveling the extreme end of a workpiece
 - (b) Embossing a diamond shaped pattern on the surface of a workpiece
 - (c) Reducing the diameter of a workpiece over a very narrow surface
 - (d) Enlarging the end of a hole cylindrically
13. The tool life is said to be over if
 - (a) Poor surface finish is obtained
 - (b) There is a sudden increase in cutting forces and power consumption
 - (c) Overheating and fuming due to heat friction starts
 - (d) All of the above
14. Thread turning is an operation of
 - (a) Low speed, large feed
 - (b) high speed, small feed
 - (c) Low speed, small feed
 - (d) high speed, large feed
15. While drilling, in which directions feed and depth of cut are applied for a twist drill?
 - (a) Perpendicular to each other
 - (b) Feed along the spindle, depth of cut along the workbench
 - (c) Both in the same direction
 - (d) Feed along the workbench, depth of cut perpendicular to feed
16. Which drilling machine is used to perform drilling operation on the workpieces which are too heavy and also maybe too large to mount on worktable?
 - (a) Portable drilling machine
 - (b) Sensitive drilling machine
 - (c) Radial drilling machine
 - (d) none of the above
17. In which process, the cutting forces are maximum when the tooth begins its cut and reduces it to minimum when the tooth leaves the work.
 - (a) Up milling

- (b) Down milling
(c) End milling
(d) Face milling
18. The cutting fluid mostly used for machining steel is
(a) Water
(b) Soluble oil
(c) Dry
(d) Heavy oil
19. In finish machining of an island on a casting with CNC milling machine, an end mill with 10 mm diameter is employed. The corner points of the island are represented by (0, 0), (0, 30), (50, 30), and (50, 0). By applying cutter radius right compensation, the trajectory of the cutter will be
(a) (-5, 0), (-5, 35), (55, 35), (55, -5), (-5, -5)
(b) (0, -5), (55, -5), (55, 35), (-5, 35), (-5, -5)
(c) (5, 5), (5, 25), (45, 25), (45, 5), (5, 5)
(d) (5, 5), (45, 5), (45, 25), (5, 25), (5, 5)
20. The function of interpolator in a CNC machine controller is to
(a) Coordinate feed rates of axes.
(b) Control spindle speed
(c) Control tool rapid approach speed.
(d) Perform Miscellaneous (M) functions (tool change, coolant control etc.)
21. Process marks produced by the action of a cutting tool are characterized as
(a) Form error
(b) Roughness
(c) Lay
(d) Waviness
22. Unless otherwise stated, surface parameters relate to
(a) Traversing length
(b) Assessment length
(c) Cut-off length
(d) Overall length
23. What term is used to designate the direction of the predominant surface pattern produced by machining operation?
(a) Roughness (b) Lay
(c) Waviness (d) Cut off
24. Interference fit joints are provided for
(a) Assembling bush bearing in housing
(b) Mounting heavy duty gears on shafts
(c) Mounting pulley on shafts
(d) Assembly of flywheels on shafts
25. Autocollimator is used to measure
(a) Gear tooth thickness
(b) Surface roughness
- (c) Flatness
(d) Waviness
26. Difference in height between the average of five highest peaks and five lowest valleys within the assessment length is designated by
(a) R_a (b) R_t
(c) R_z (c) R
27. A basic hole is one whose :
(a) Lower deviation is zero
(b) Upper deviation is zero
(c) Lower and upper deviations are zero
(d) None of the above
28. Allowance in limits and fits refers to
(a) Maximum clearance between shaft and hole
(b) Minimum clearance between shaft and hole
(c) Difference between maximum and minimum size of hole
(d) Difference between maximum and minimum size of shaft
29. Match the following
- | List I | List II |
|-----------------------------|---|
| A. Surface profilometer | (1) Calibration |
| B. Light Section Microscope | (2) Form tester |
| C. Microkater | (3) Film thickness measurement |
| D. Interferometer | (4) Centre line average
(5) Comparator
(6) Surface by measurement |
- (a) A – 1, B – 3, C – 5, D – 2
(b) A – 2, B – 5, C – 3, D – 1
(c) A – 5, B – 3, C – 1, D – 2
(d) A – 2, B – 3, C – 5, D – 1
30. A screw thread specified by M 20 x 2.5 C as per BIS thread system means
(a) Metric thread of 20 mm nominal diameter and 2.5 mm pitch having coarse tolerance
(b) Metric thread of 20 mm root diameter and 2.5 mm pitch having coarse tolerance
(c) Metric thread of fine class having 20 mm root diameter and 2.5 mm pitch
(d) Metric thread of 20 mm shank diameter and 2.5 mm thread depth with coarse tolerance
31. Which of the following from the 5S technique means 'to separate out all unnecessary things and eliminate them'?
(a) Seiri

- (b) Seiton
 - (c) Seiso
 - (d) Seiketsu
32. Which country invented the 5S concept?
- (a) India
 - (b) Japan
 - (c) Vietnam
 - (d) Norway
33. Seiketsu, a Japanese term of 5S methodologies, represents
- (a) Sort
 - (b) Straighten
 - (c) Standardize
 - (d) Sustain
34. Who can be responsible for accident?
- (a) Management
 - (b) Worker
 - (c) Working condition
 - (d) All of the above
35. Decibel (db) is a unit used to measure
- (a) Light
 - (b) Sound
 - (c) Frequency
 - (d) None of the above
36. The wt% of Carbon in eutectoid steel
- (a) 0.25
 - (b) 0.8
 - (c) 2.1
 - (d) 4.0
37. Heat treatment technique used to increase the hardness of the medium carbon steel
- (a) Annealing
 - (b) Normalizing
 - (c) Quenching
 - (d) Anodizing
38. The yield strength of a steel material in descending order
- (a) Low carbon steel, medium carbon steel, high carbon steel
 - (b) High carbon steel, medium carbon steel, low carbon steel
 - (c) Medium carbon steel, low carbon steel, high carbon steel
 - (d) High carbon steel, low carbon steel, medium carbon steel
39. What is the full form of BCC structure
- (a) Body Centered Cubic structure
 - (b) Body Cubic Centered structure
 - (c) Bayesian Cubic Centered structure
 - (d) None of the above
40. The stress-strain graph of a material can be obtained using
- (a) Tensile testing machine
 - (b) Toughness testing machine
 - (c) Hardness testing machine
 - (d) Fatigue testing machine

