



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 (fitter)

Maximum Marks: 40

Time: 45 Minutes

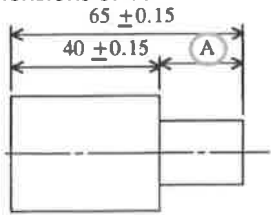
Candidate Name	
Post Serial Number	
Signature of Invigilator	

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. A square plate of negligible thickness is inclined to HP. The front view will appear as
 - (a) Rhombus
 - (b) Square
 - (c) Line
 - (d) Rectangle
2. This type of solid has two bases that are parallel equal polygons:
 - (a) pyramid
 - (b) prism
 - (c) cone
 - (d) torus
3. When the axis of the solid is parallel to both HP and VP the view which reveals the true shape of the base is
 - (a) Front view
 - (b) Top view
 - (c) Side view
 - (d) None of these
4. For orthographic projection, the engineering custom in Europe dictates the use of:
 - (a) first-angle projection
 - (b) second-angle projection
 - (c) third-angle projection
 - (d) fourth-angle projection
5. Fourth angle projection is not used because
 - (a) Front view is above reference line and top view is below reference line
 - (b) Top view is above reference line and front view is below reference line
 - (c) Front view and top view both overlap on each other and below reference line
 - (d) Front view and top view both overlap on each other and above the reference line
6. Which bolt is commonly used in bearings for shafts?
 - (a) T-headed bolt
 - (b) Square-headed bolt
 - (c) Hook bolt
 - (d) Eye-bolt
7. Which of the following is the appropriate drill size for an M10 tap?
 - (a) 8.5 mm
 - (b) 10 mm
 - (c) 7.5 mm
 - (d) 9.5 mm
8. The process of filing from one end to another end in one stroke is called:
 - (a) Cross-filing
 - (b) Drop filing
 - (c) Draw filing
 - (d) Lathe filing
9. Slots are provided in an angle plate for _____.
 - (a) Keeping the job straight
 - (b) Hold the heated component
 - (c) Lifting with hook etc.
 - (d) Tightening of nut and bolt
10. Which nut is a hexagonal nut with a washer?
 - (a) Flanged nut
 - (b) Cap nut
 - (c) Wing nut
 - (d) Dome nut
11. What is the purpose of a torque wrench in mechanical assembly?
 - (a) Measuring strain value
 - (b) Tightening bolts to a specific torque
 - (c) Measuring temperature
 - (d) To tighten the bolts
12. A fixture is used to _____.
 - (a) Guide the tool
 - (b) Hold the workpiece
 - (c) Cut the workpiece
 - (d) Drill the workpiece
13. The process of enlarging the hole size and enhancing its surface finish is known as _____.
 - (a) Boring
 - (b) Countersinking
 - (c) Drilling
 - (d) Punching
14. Which of the following material is the outer part of a holding jaw in a bench vice made up of?
 - (a) Mild Steel
 - (b) Cast Iron
 - (c) Copper
 - (d) Aluminium
15. Which material is used to make a file?
 - (a) Cast iron
 - (b) Aluminium
 - (c) Low carbon steel
 - (d) High carbon steel
16. Which of the following is used to hold pipes between 50-150 mm dia?
 - (a) Footprint wrench
 - (b) Socket wrench
 - (c) Bench vice
 - (d) Chain pipe wrench
17. Which type of file is used for removing material quickly in a roughing operation?
 - (a) Cross-filing
 - (b) Drop filing
 - (c) Draw filing
 - (d) Lathe filing

- (a) Flat file
(b) Round file
(c) Bastard file
(d) Second-cut file
18. Which type of gear provides the highest mechanical advantage?
(a) Bevel gear
(b) Helical gear
(c) Worm gear
(d) Spur gear
19. What type of thread is produced using a die in threading operations?
(a) External thread
(b) Right-hand thread
(c) Left-hand thread
(d) Taper thread
20. Which one of the following maintenance is the most effective?
(a) Shutdown
(b) Corrective
(c) Breakdown
(d) Preventive
21. Which among the following is a type of clearance fit?
(a) Force fit
(b) Push fit
(c) Slide fit
(d) Tight fit
22. The amount by which the actual size of a shaft is less than the actual size of mating hole in an assembly is
(a) Clearance
(b) Interference
(c) Allowance
(d) None of the above
23. The following is used to check the diameters of holes
(a) Plug gauge
(b) Ring gauge
(c) Slip gauge
(d) Standard screw pitch gauge
24. Error of measurement =
(a) True value – Measured value
(b) Precision – True value
(c) Measured value – Precision
(d) None of the above
25. The following is not a type of comparator
(a) Electrical
(b) Pneumatic
(c) Optical
(d) Hydraulic
26. The ability by which a measuring device can detect small differences in the quantity being measured by it, is called its
(a) Damping
(b) Sensitivity
(c) Accuracy
(d) Hysteresis
27. 'Electrolimit' gauge block comparator and 'Talyman' Electrical comparator work on the principle of
(a) Kirchoff's law
(b) Wheatstone bridge
(c) Faraday,s law
(d) Lenz,s law
28. The following is not used to measure angles
(a) Bevel protector
(b) Calibrated level
(c) Clinometer
(d) Optical flat
29. A shaft has a dimension $\phi 35^{+0.009}_{-0.025}$. The respective values of fundamental deviation and tolerance are
(a) $-0.025, \pm 0.008$
(b) $-0.025, 0.016$
(c) $0.009, \pm 0.008$
(d) $0.009, 0.016$
30. Calculate dimensions of 'A'


(a) $A_{\max} = 25.7, A_{\min} = 24.3$
(b) $A_{\max} = 25.3, A_{\min} = 24.7$
(c) $A_{\max} = 25.0, A_{\min} = 24.0$
(d) $A_{\max} = 25.13, A_{\min} = 24.17$
31. The following is (are) used as safety device (s) in machines.
(a) Fail safe
(b) Safety interlocks
(c) Limit switches
(d) All of the above
32. Who is responsible for making sure you are using the appropriate personal protective equipment and that is in good working condition?
(a) Your supervisor
(b) Person in-charge of safety
(c) Your co-workers
(d) You

33. Which of the following is used to extinguish fire?
(a) Water
(b) Foam
(c) Chemical
(d) All of the above
34. The following is indirect cost of an accident
(a) Money paid for treatment of worker
(b) Compensation paid to worker
(c) Cost of lost time of injured worker
(d) All of the above
35. Which coloured band denotes the "Carbon dioxide" content in the fire extinguisher?
(a) Red
(b) Blue
(c) White
(d) Black
36. The ferrous alloys having wt% of carbon greater than 2.1 are
(a) Steels
(b) Cast iron
(c) Hyper-eutectoid steels
(d) Hypo-eutectoid steels
37. Another name for TTT diagram
(a) Constant Cooling Transformation diagram
(b) Isothermal Transformation diagram
(c) Both (a) and (b)
(d) None of the above
38. The safety pin in a stainless steel pressure cooker is made of
(a) Eutectic ferrous alloy
(b) Eutectoid steel
(c) Aluminum
(d) Copper
39. Melting point of Aluminum
(a) 650 °C
(b) 720 °C
(c) 860 °C
(d) 520 °C
40. Microhardness of a material can be measured using
(a) Vickers hardness
(b) Brinell hardness
(c) Rockwell hardness
(d) none of the above

