राष्ट्रीय प्रौद्योगिकी संस्थान वरंगल
वरंगल – 506004, तेलंगाना, भारत
NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL
WARANGAL – 506004, Telangana, INDIA

QUESTION BOOKLET – ADVANCED TEST FOR RECRUITMENT TO TECHNICAL CADRE POSTS

Post:	Technical Assistant
Department	Mechanical Engineering
Advt.:	01/2026 dated 09.01.2026
Date of Exam:	19-08-2026
Duration:	2 Hours
Total Marks:	200 (100 Q X 2 M each)
No. of Questions:	100 (MCQs)
Negative Marking:	1/4th mark for every wrong answer

INSTRUCTIONS TO THE CANDIDATES

1. This is an Advanced Test comprising 100 Multiple Choice Questions (MCQs), to be conducted in MCQ mode only.
2. The duration of the test is 2 hours.
3. Answers must be marked on the OMR Answer Sheet using a blue or black ballpoint pen only. Use of pencils is not permitted.
4. Candidates must write/mark their Roll Number, Post applied for, and other required details in the designated space on the OMR Answer Sheet.
5. Answers marked on the Question Booklet or on any sheet other than the OMR Answer Sheet will not be evaluated.
6. For each question, darken the circle corresponding to the correct answer completely and clearly on the OMR Answer Sheet.
7. Each question carries equal marks. There will be a negative marking of ¼ th mark for every wrong answer. No marks will be deducted for questions not attempted.
8. Mark only one answer for each question. Marking more than one circle for a question will be treated as a wrong answer.
9. Overwriting, cutting, or erasing that leaves the OMR Answer Sheet unclear may result in the answer not being evaluated.
10. No candidate shall leave the examination hall during the test.
11. Any attempt to copy, use unfair means, or communicate with others will result in immediate disqualification.
12. The use of electronic gadgets, calculators, mobile phones, smart watches, or any written/printed material is strictly prohibited.
13. Rough work, if any, should be done only on the separate sheet provided for the purpose.
14. Ensure that the OMR Answer Sheet is duly filled and handed over to the Invigilator before leaving the examination hall.
15. Failure to submit the OMR Answer Sheet will result in cancellation of candidature.
16. All material provided, including rough sheets, must be returned before leaving the examination hall.

1. Which tool is using for marking two parallel lines simultaneously in carpentry?
   (A) Marking Gauge
   (B) Mortise Gauge
   (C) Bevel square
   (D) Tri Square

2. The common job holding device used in wood working is
   (A) Adze
   (B) Try square
   (C) Band Saw
   (D) Carpentry vice

3. To plane a surface, we use
   (A) Chisel
   (B) Saw
   (C) Jack plane
   (D) Mortise gauge

4. The joint is used for joining two wooden pieces to form corner
   (A) Cross lap joint
   (B) Briddle joint
   (C) Dovetail joint
   (D) Tenon joint

5. Bench vice body is made of
   (A) Steel
   (B) Cast iron
   (C) Brass
   (D) Aluminum

6. If the number of cuts are more, then the file is called
   (A) Rough file
   (B) Smooth file
   (C) Bastard file
   (D) Round file

7. Generally fitting tools are made of
   (A) Mild steel
   (B) High speed steel
   (C) Cast iron
   (D) High carbon steel

8. Manufacturing process deals with molten metal is
   (A) Casting
   (B) Forging
   (C) Rolling
   (D) Machining

9. Which moulding process is used for very large castings?
   (A) Bench moulding
   (B) Ground moulding
   (C) Pit moulding
   (D) Floor moulding

10. The tool is used for packing the sand into the mould
   (A) Rammer
   (B) Trowel
   (C) Riddle
   (D) Vent rod

11. The top part of a mould is called?
   (A) Drag
   (B) Cope
   (C) Cheek
   (D) Shovel

12. The bottom part of a mould is called?
   (A) Drag
   (B) Cope
   (C) Cheek
   (D) Shovel

13. A mandrel is used to hold
   (A) an eccentric work
   (B) a heavy work
   (C) a light work
   (D) hollow tubular work piece

14. Which one of the following is not a lathe operation?
   (A) Turning
   (B) Facing
   (C) Tapping
   (D) Drilling

15. Four jaw chuck is also called as
(A) independent chuck
(B) magnetic chuck
(C) self-centering chuck
(D) none of the above

16. The rotating motion in a lathe is provided by?
(A) Chuck
(B) Centres
(C) Spindle
(D) Mandrel

17. Feed is expressed in?
(A) mm
(B) mm/rev
(C) m/min
(D) rpm

18. What kind of chips will be formed while machining aluminum?
(A) Continuous chips
(B) Discontinuous chips
(C) Discontinuous chips with built-up edge (BUE)
(D) Serrated chips

19. In a turning operation if the depth of cut is 2mm, then the diameter will be reduced by
(A) 2 mm
(B) 4 mm
(C) 6 mm
(D) 8 mm

20. Which operation is performed to remove the sharp edges in the work piece
(A) Turning
(B) Eccentric turning
(C) Chamfering
(D) Knurling

21. In the tool signature, the nose radius is expressed in?
(A) degree
(B) radian
(C) mm
(D) meter

22. The least count of slip gauges is
(A) 0.01mm
(B) 0.05mm
(C) 0.001mm
(D) 0.005mm

23. Which of the following instrument is used to measure the depth?
(A) Bevel protractor
(B) Vernier depth gauge
(C) Vernier caliper
(D) Both (B) & (C)

24. Sine bar is specified by
(A) distance between the two rollers
(B) total length
(C) width
(D) weight

25. Accuracy of a measuring instrument is?
(A) its capability to indicate the same reading repeatedly of given job
(B) the smallest value that can be measured with its use
(C) the closest reading to its true size
(D) the closeness of reading that can be taken with it

26. Inner jaws (upper jaws) of Vernier caliper is used to measure?
(A) inside diameter
(B) outside diameter
(C) internal depth
(D) thickness

27. Degree of repetitiveness is known as?
(A) accuracy
(B) precision
(C) zero error
(D) least count

28. The cylindrical grinding process finishes
(A) internal cylindrical surfaces
(B) horizontal flat surfaces
(C) external cylindrical surfaces
(D) irregular surfaces

29. How the Shaper is specified?
(A) Stroke length
(B) Work piece Size
(C) Length of the Bed
(D) Toll width

30. Which of this operation cannot be done on drilling machine?
(A) Boring
(B) Reaming
(C) Knurling
(D) Tapping

31. Which of the following tool is used to finish the drilled hole to correct size
(A) Die
(B) Tap
(C) Reamer
(D) File

32. The easiest way in which an internal keyway can be cut by?
(A) Shaper
(B) Slotter
(C) Planer
(D) Both B and C

33. Rapid prototyping is a
(A) joining process
(B) removal process
(C) regenerative manufacturing process
(D) finishing process

34. Name plates are made by which of the sheet metal operation?
(A) Embossing
(B) Lancing
(C) Perforating
(D) Seaming

35. Tooth paste tubes in mass production are made of which extrusion process?
(A) Tube extrusion
(B) Side extrusion
(C) Impact Extrusion
(D) Direct extrusion

36. Process of cutting a piece of required shape from a sheet metal is
(A) punching
(B) scaling
(C) compacting
(D) blanking

37. Powder metallurgy is suitable for
(A) batch production
(B) job production
(C) mass production
(D) all the above

38. Which process is using for join the sheet metal without fasteners?
(A) Hemming
(B) Beading
(C) Notching
(D) Seaming

39. Which type of transformer is used in welding m/c
(A) step up transformer
(B) step down transformer
(C) step up & step down transformer
(D) none of the above

40. The colour of oxygen cylinder is?
(A) Maroon
(B) Black
(C) Red
(D) Blue

41. Heat and work are
(A) intensive properties
(B) point functions
(C) extensive properties
(D) path functions

42. An isentropic process must be
(A) reversible process
(B) adiabatic process
(C) reversible adiabatic process
(D) Irreversible process

43. Availability of a system at any given state is
(A) a property of the system
(B) the maximum work obtainable as the system goes to dead state
(C) the total energy of the system
(D) the maximum useful work obtainable as the system goes to dead state

44. A cycle consisting of two reversible isothermal processes and two reversible isobaric processes is known as
(A) Atkinson cycle
(B) Stirling cycle
(C) Brayton cycle
(D) Ericsson cycle

45. The Kelvin temperature of a system can be measured by a
(A) mercury-in-glass thermometer
(B) thermocouple
(C) constant-volume gas thermometer
(D) resistance thermometer

46. Bomb calorimeter determines
(A) higher calorific value of fuels at constant volume
(B) lower calorific value of fuels at constant volume
(C) higher calorific value of fuels at constant pressure
(D) lower calorific value of fuels at constant pressure

47. The slope of a Mollier diagram at constant pressure indicates
(A) enthalpy
(B) entropy
(C) internal energy
(D) temperature

48. The wet bulb temperature lies between
(A) below dry bulb and dew point temperatures
(B) below dry bulb and above dew point temperature
(C) above dry bulb and below dew point
(D) above of both dry bulb and dew point

49. In lumped heat capacity analysis, the temperature variation within the solid is
(A) negligible
(B) very large
(C) any value
(D) none

50. Biot number signifies
(A) the ratio of heat conducted to heat convected
(B) the ratio of heat convected to heat conducted
(C) the ratio of external convective resistance to internal conductive resistance
(D) the ratio of internal conductive resistance to external convective resistance

51. Fins are used to increase the heat transfer from a surface by
(A) increasing the temperature difference
(B) increasing the effective surface area
(C) increasing the convective heat transfer coefficient
(D) none of the above

52. What is the basic equation of thermal radiation from which all other equations of radiation can be derived?
(A) Stefan-Boltzmann equation
(B) Planck's equation
(C) Wien's equation
(D) Rayleigh-Jeans formula

53. The choke in an automobile meant for supplying
(A) lean mixture
(B) rich mixture
(C) stoichiometric mixture
(D) weak mixture

54. In a simple Rankine cycle due to increase in boiler pressure,
(A) pump work decreases
(B) quality at exhaust increases
(C) specific condenser load decreases
(D) thermal efficiency remains constant

55. An economizer is fitted with a boiler to
(A) increase the steam pressure
(B) heat the fuel of low calorific value
(C) heat the air entering the fire grate
(D) heat the feed water by exhaust flue gases

56. Kaplan turbine is suitable for
(A) high head, low discharge
(B) low head, high discharge
(C) high head, high discharge
(D) low head, low discharge

57. A Pelton turbine is
(A) an impulse turbine
(B) a tangential flow
(C) high head and low specific speed turbine
(D) all the above

58. Blading efficiency is also known as
(A) stage efficiency
(B) overall efficiency
(C) nozzle efficiency
(D) diagram efficiency

59. Subsonic and supersonic diffusers have the following geometry
(A) divergent and convergent respectively
(B) both divergent
(C) both convergent
(D) convergent and divergent respectively

60. The clearance volume in a reciprocating compressor is provided to
(A) create turbulence in the air to be delivered
(B) accommodate valves in the cylinder head of the compressor
(C) increase the volumetric efficiency of the compressor
(D) reduce the work input per kg of air delivered

61. Which type of compressor used in gas-turbine power plants
(A) centrifugal compressor
(B) axial flow compressor
(C) reciprocating compressor
(D) rotary compressor

62. Isothermal efficiency of a compressor is defined as the ratio of
(A) volume of free air delivered per stroke to the swept volume of the piston
(B) indicated power to shaft power of the motor of engine required to drive the compressor
(C) adiabatic power to the power required to drive the compressor
(D) isothermal work to the actual work required to compress the air for the same pressure ratio

63. Who developed the concept of boundary layer theory?
(A) Stoke
(B) Prandtl
(C) Hagen's Poiseuille
(D) Pascal

64. Viscosity is a property that manifests
(A) at fluid-solid boundaries only
(B) between two adjacent fluid layers in relative motion
(C) in uniform incompressible flows
(D) only in turbulent flows

65. The laminar flow is characterized by
(A) irregular motion of fluid particles
(B) fluid particles moving in layers parallel to the boundary surface
(C) high Reynolds number flows
(D) existence of eddies

66. With increase of temperature, viscosity of a fluid
(A) does not change
(B) always increases
(C) always decreases
(D) increases if the fluid is a gas and decreases if it is a liquid

67. Cavitation is caused due to
(A) high velocity
(B) low pressure
(C) high pressure
(D) high temperature

68. Which of the following pressure units represents the highest pressure?
(A) millibar
(B) N/mm^2
(C) mm of mercury
(D) kgf/cm^2

69. Diverging limb of a venturi meter is longer than the converging limb to
(A) ensure that the flow remains laminar
(B) avoid separation
(C) ensure that the flow remains turbulent
(D) avoid formation of boundary layer

70. Which of the following factors determine the friction factor for turbulent flow in a rough pipe?
(A) Mach number and relative roughness
(B) Froude's number and Mach's number
(C) Reynolds number and relative roughness
(D) Froude's number and relative roughness

71. Inversion of a mechanism is
(A) changing of a higher pair to lower pair
(B) obtained by fixing different links in a kinematic chain
(C) turning it upside down
(D) obtained by reversing the input and output motion

72. Instantaneous centre of a body rolling with sliding on a stationary curved surface lines
(A) at the point of contact
(B) on the common normal at the point of contact
(C) on the common tangent at the point of contact
(D) at the centre of curvature of the stationary surface

73. Out of the two governors A and B, if governor A has a larger lift than B for a given fractional change of speed,
(A) governor A is said to be more sensitive than B
(B) governor B is said to be more sensitive than A
(C) both the governors are said to be equally sensitive
(D) none of these

74. Hammer blow
(A) is the maximum horizontal unbalanced force caused by the mass provided to balance the reciprocating masses
(B) is the maximum vertical unbalanced force caused by the mass added to balance the reciprocating masses
(C) varies as the square root of the speed
(D) varies inversely with the square of the speed

75. Balancing is the process of the --- unbalances by balance masses ---. Identify the suitable words to fill these blanks.
(A) elimination, adding
(B) minimization, removing
(C) minimization, adding
(D) elimination or minimization, adding or removing

76. The effect of gyroscopic torque on the naval ship when it is rolling and the rotor is spinning about the longitudinal axis is
(A) to raise the bow and lower the stem
(B) to lower the bow and raise the stem
(C) to turn the ship to one side
(D) none of the above

77. When the speed of an engine fluctuates continuously above and below the mean speed, then the governor is said to be
(A) stable
(B) unstable
(C) isochronous
(D) hunting

78. Which of the following is considered as a true characteristic yield stress for mild Steel?
(A) Proof stress
(B) Ultimate stress
(C) Upper yield point
(D) Lower yield point

79. The ratio of bulk modulus to Young's modulus is
(A) less than half
(B) less than one third
(C) more than one third
(D) no relation at all

80. When the two principal stresses are equal and like, the resultant stress on any plane is
(A) equal to the principal stress
(B) zero
(C) one half of principal stress
(D) one third of the principal stress

81. The bending moment in a beam is maximum where
(A) shear force is uniform
(B) shear force is maximum
(C) shear force is minimum
(D) shear force changes sign

82. A beam is said to be uniform strength when
(A) maximum shear stress is same everywhere
(B) maximum bending stress is same everywhere
(C) both (A) and (B)
(D) none of the above

83. When a shaft is subjected to pure twisting, the type of stress developed in the shaft is
(A) bending stress
(B) axial stress
(C) shear stress
(D) normal stress

84. The maximum energy stored at elastic limit of a material is called
(A) resistance
(B) modulus of resilience
(C) proof resilience
(D) bulk resilience

85. Which of the following material has the maximum ductility?
(A) Aluminum
(B) Copper
(C) Mild steel
(D) Zinc

86. Which metal has highest density among the following?
(A) Lead
(B) Tungsten
(C) Steel
(D) Cast iron

87. A strut is a structural member carrying
(A) tension
(B) compression
(C) shear
(D) none of the above

88. Bolts are rarely subjected to
(A) tension
(B) compression
(C) shear
(D) bending

89. The clutch is used for
(A) connecting two shafts permanently
(B) connecting driver and driven shaft intermittently
(C) connect and disconnect the driver and driven shaft according to requirement
(D) change the speed of driver and driven shaft according to requirement

90. The size of spur gear is specified by
(A) number of teeth
(B) module
(C) pitch circle diameter
(D) circular pitch

91. The shear stress distribution over a rectangular cross-section of a beam follows a
(A) straight line path
(B) circular path
(C) parabolic path
(D) elliptical path

92. Quick return mechanism is an inversion of a
(A) four bar chain
(B) double slider crank chain
(C) single slider crank chain
(D) crossed slider crank chain

93. For a ductile material, toughness is a measure of
(A) resistance to scratching
(B) ability to absorb energy up to fracture
(C) ability to absorb energy till elastic limit
(D) resistance to indentation

94. The buckling load of a long column given by Euler's formula does not depend on
(A) elastic property of material
(B) strength of column material
(C) cross sectional properties
(D) the end conditions

95. Pick up the incorrect statement of the following:
(A) a ductile material has a greater resistance to fracture under shock loading
(B) grooved specimens are very weak in impact
(C) for sudden loading, maximum deflection is twice that of static loading
(D) stress due to impact loading is a function of load and area of cross section only

96. A solid circular shaft is subjected to a maximum shear stress of 140 MPa. The magnitude of the maximum normal stress developed in the shaft is
(A) 140 MPa
(B) 80 MPa
(C) 70 MPa
(D) 60 MPa

97. A localized compressive stress at the area of contact between two components is named as
(A) Shear stress
(B) bearing stress
(C) Tensile stress
(D) Bending stress

98. Lasches's equation is useful for finding
(A) power lost in friction
(B) temp of oil film
(C) heat dissipated by bearing
(D) heat generated due to rotation of journal

99. A cylindrical roller bearing carries
(A) only heavy radial load
(B) only heavy axial load
(C) both radial and axial load
(D) only medium axial loads.

100. Stub tooth is
(A) provided on racks only
(B) a tooth of standard profile
(C) longer than standard tooth
(D) shorter than standard tooth

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