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:	Technician
Department	Estate
Advt.:	01/2026 dated 09.01.2026
Date of Exam:	22-08-2026
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. ……..deals with behavior of elastic bodies subjected to external effects of forces acting on rigid bodies
   A. Hydrostatics
   B. Hydrodynamics
   C. Strength of Materials
   D. Fluid Mechanics

2. Which of the following is the scalar quantity?
   A. Force
   B. Velocity
   C. Time
   D. Moment

3. Equilibrium conditions for coplanar concurrent forces are
   A. $\Sigma H = 0$
   B. $\Sigma V = 0$
   C. Both (A) and (B)
   D. $\Sigma H = 1$

4. First equation of motion under uniform acceleration is given as
   A. $v = u + a\,t$
   B. $v = u - a\,t$
   C. $v = u - a^2\,t$
   D. $v = u^2 + a\,t$

5. The time taken by the two bodies in compression, after the instant of collision, is known as
   A. Period of compact
   B. Time of restitution
   C. Time of collision
   D. Time of compression

6. When the coefficient of restitution (e) is one, the bodies are
   A. Inelastic to some extent
   B. Inelastic
   C. Perfect elastic
   D. Perfect inelastic to some extent

7. Which of the following are used when the shaft distance is adequately less?
   A. Belts
   B. Chains
   C. Gears
   D. Cluthes

8. .....belts are acid and water proof
   A. Leather
   B. Rubber
   C. Textile
   D. Balata

9. The reverse of the diametral pitch is called
   A. Module
   B. Addendum
   C. Dedendum
   D. Clearance

10. The angle of projection, for maximum horizontal range should be
   A. 20°
   B. 30°
   C. 45°
   D. 90°

11. One Megawatt is equal to
   A. 1×10^6 N m / s
   B. 1×10^6 N/min
   C. 1×10^9 N/min
   D. 1×10^9 N m /s

12. Work done in a free expansion process is
   A. Zero
   B. Maximum
   C. Minimum
   D. Always negative value

13. One bar is equal to
   A. 1×10^9 N / m^2
   B. 1×10^6 N / m^2
   C. 1×10^4 N / m^2
   D. 1×10^5 N / m^2

14. In SI units, the value of the universal gas constant
   A. 8314 J/mole K
   B. 8.314 J/mole K
   C. 83.14 J/mole K
   D. 0.8314 J/mole K

15. The processes or systems that do not involve heat are called
    A. Isothermal process
    B. Equilibrium process
    C. Adiabatic process
    D. Unsteady process

16. The Nusselt number, in case of natural convection, is a function of
    A. Weber number and Mach number
    B. Grashoff's number and Prandtl number
    C. Reynolds number
    D. Reynolds number and Prandtl number

17. The reflectance of a black body is
    A. zero
    B. less then 1.0
    C. 1.0
    D. Infinity

18. What is the unit of diffusion coefficient?
    A. m^2
    B. s
    C. $m^2 s$
    D. m^2/s

19. ------ has maximum value of thermal conductivity.
    A. Lead
    B. Copper
    C. Steel
    D. Brass

20. Why fins are provides on heat transferring surface
    A. To increase heat transfer coefficient
    B. To increase temperature gradient
    C. To increase heat transfer area
    D. To decorate the surface

21. The ratio of brake power to indicated power of an IC engine is called as?
    A. Mechanical efficiency
    B. Thermal efficiency
    C. Volumetric efficiency
    D. Relative efficiency

22. Compression ratio of diesel engines may have a range
    A. 8 to 10
    B. 10 to 15
    C. 16 to 20
    D. 80 to 100

23. The ignition quality of fuels for SI engine is determined by
    A. Cetane number rating
    B. Octane number rating
    C. Calorific value rating
    D. Volatility of the fuel

24. The use of tetraethyl lead in gasoline in being gradually discontinued since its presence
    A. Decreases the engine speed
    B. Blocks the catalytic converter
    C. Makes the fuel costly
    D. Gives bad odour

25. The specific gravity of diesel oil is?
    A. 0.6
    B. 0.75
    C. 0.85
    D. 1.2

26. ------coal has the highest calorific value
    A. Bituminous
    B. Lignite
    C. Peat
    D. Anthracite

27. In a Babcock and Wilcox boiler the water tubes are?
    A. Vertical
    B. Horizontal
    C. Inclined
    D. Horizontal and vertical

28. The capacity of the compressor is expressed in…..
    A. m^3/kg
    B. m^3/min
    C. kg / m^3
    D. kg / J

29. The percentage of O_2 by weight in atmospheric air is
    A. 79%
    B. 23%
    C. 77%
    D. 21%

30. Which part of the vapour compression refrigeration cycle, produces the refrigeration effect?
    A. Compressor
    B. Condenser
    C. Evaporator
    D. Expansion valve

31. Property of material due to which it breaks with little permission distortion is called
    A. Brittleness
    B. Ductility
    C. Malleability
    D. Fatigue

32. Silicon when added to copper increases in
    A. Machinability
    B. Brittleness
    C. Electrical conductivity
    D. Hardness and Strength

33. Carbon in the pig iron varies from
    A. 4 to 5%
    B. 2 to 4%
    C. 5 to 8%
    D. 5 to 10%

34. Cast iron produced by adding elements like nickel, chromium, copper and molybdenum to the molten cast iron is
    A. Chilled cast iron
    B. Grey cast iron
    C. Malleable cast iron
    D. Nodular cast iron

35. Process of pouring molten metal under high pressure into mould is called
    A. Permanent mould casting
    B. Die casting
    C. Slush casting
    D. Centrifugal casting

36. Parts of circular cross section which are symmetrical about the axis of rotation are made by
    A. Hot spinning
    B. Hot forging
    C. Hot extrusion
    D. Hot piercing

37. Mechanical properties of the metal improve in hot working due to
    A. Recovery of grains
    B. Recrystallisation
    C. Grain growth
    D. Refinement of grain size

38. Production of contours in flat blank is termed as
    A. Blanking
    B. Piercing
    C. Perforating
    D. Punching

39. The major problem in hot extrusion is
    A. Design of punch
    B. Design of die
    C. Wear and tear of die
    D. Wear of punch

40. In spot welding, the tip of electrodes is made up of
    A. Stainless Steel
    B. Aluminium
    C. Copper
    D. Brass

41. A bicycle remains stable in running through a bend because of
    A. Gyroscopic action
    B. Corioliss' acceleration
    C. Centrifugal action
    D. Radius of curved path

42. In gears, interference take place when
    A. Tip of a tooth of a mating gear digs into the portion between base and root circles
    B. Gears do not move smoothly in the absence of lubrication
    C. Pitch of the gear is not same
    D. Gear teeth are undercut

43. A certain minimum number of teeth is to be kept for a gear wheel
    A. So that the gear is of a good size
    B. For better durability
    C. To avoid interference and undercutting
    D. For better strength

44. The height of a simple watt governor running at a speed 'N' is proportional to
    A. N
    B. 1/N
    C. N^2
    D. $1/N^2$

45. In a multiple V belt drive, when a single belt is damaged, it is preferable to change the complete set to
    A. Reduce vibration
    B. Reduce slip
    C. Ensure uniform loading
    D. Ensure proper alignment

46. .....is the angle of inclination of the plane, at which the body begins to move down the plane
    A. Angle of repose
    B. Angle of projection
    C. Angle of friction
    D. Angle of lap

47. In case of a shaft carrying two rotors at its end, there will be
    A. One node
    B. Two nodes
    C. Three nodes
    D. Four nodes

48. .....governor is a dead weight governor.
    A. Watt
    B. Pickering
    C. Hartnell
    D. Porter

49. For a vibrating system, if the damping factor is unity, then the system is ..... damped.
    A. Under
    B. Over
    C. Critically
    D. Zero

50. What is the unit of mass moment of inertia in SI units?
    A. kg-m
    B. kg-m^2
    C. m^4
    D. Nm /kg

51. In a belt-drive if the pulley diameter is doubled keeping the tension and belt width constant, then it will be necessary to
    A. increase the key length
    B. increase the key depth
    C. increase the key width
    D. decrease the key length

52. American standard threads have the angle equal to
    A. 55^o
    B. 60^o
    C. 29^o
    D. 58^o

53. In rail road car axles, which of the following bearing is used?
    A. Partial
    B. Fitted
    C. Full
    D. Linear

54. The bearing characteristics number in a hydrodynamic bearing depends on
    A. length, width and load
    B. length, width and speed
    C. viscosity, speed and load
    D. viscosity, speed and pressure

55. A closed -coil helical spring is subjected to a torque about its axis. The spring wire would experience a
    A.Bending Stress
    B. Direct tensile stress of uniform intensity at its cross -section
    C. Direct shear stress
    D. Torsional shearing stress.

56. Which of the following brakes is commonly used in railway trains?
    A. Bank brake
    B. Internal expanding brake
    C. Shoe brake
    D. Band and block brake

57. The rated life of bearing
    A. Varies inversely as square of load
    B. Varies inversely as cube of load
    C. Varies inversely as fourth power of load
    D. Varies directly as load

58. For double helical gears, the helix angle may be made up to……..
    A. 30°
    B. 45°
    C. 60°
    D. 75°

59. Which of the following is used to transmit a high velocity ratio in limited space
    A. Helical gears
    B. Bevel gears
    C. Herringbone gears
    D. Worm and worm wheel

60. What is the notch angle of the Izod impact test specimen
    A. 15°
    B. 25°
    C. 35°
    D. 45°

61. When damping ratio …… a second order system would be critically damped.
    A. equals unity
    B. is less than unity
    C. is greater than unity
    D. tends to infinity

62. ……. is not an clement of electro pneumatic pressure transmitter.
    A. Flapper nozzle mechanism
    B. LVDT
    C. Bellows
    D. Operational amplifier

63. Thermistors have ……. temperature co-efficient
    A. low and positive
    B. high and positive
    C. low and negative
    D. high and negative

64. ……..is used to measure flow of air around an aeroplane
   A. Anemometer
   B. Venturimeter
   C. Orifice
   D. Rotatmeter

65. Using a rotameter, we can measure
   A. Condenser pressure (vacuum)
   B. Rotation
   C. Viscosity
   D. Flow

66. For a strain gauge, a high gauge factor results in
   A. Zero drift
   B. Linear response
   C. Low hysteresis
   D. High sensitivity

67. …… is not provided on combination set
   A. Spirit level
   B. Vernier scale
   C. Protractor head
   D. Centre head

68. Standard resistor is made from…….
   A. Platinum
   B. Manganin
   C. Silver
   D. Nichrome

69. Tomlinson recorder is used to measure surface ……..
   A. Flatness
   B. Finish
   C. Curvature
   D. Perpendicularity

70. …… is not an angle measuring device
   A. Angle iron
   B. Angle gauge blocks
   C. Sine bar
   D. Bevel protractor

71. The APT (Automatically Programmed Tools) language is used with
    A. drafting systems
    B. NC machines
    C. programmable controllers
    D. large automation systems

72. For converting CAD and CAM to CIM, one requires a common data base and
    A. the system must make provision for new techniques
    B. there should be a common 3-D part description system\
    C. technical assistance must be provided to the user
    D. the user must have access to both hardware and software

73. Four different types of CAD tools that can be used in IC design are, geometric, symbolic, procedural, and
    A. cell-base
    B. assembly
    C. open loop
    D. logic

74. The advantage of implementing CAD is to
    A. increase quality of design
    B. expertise in the area of data base manufacturing management
    C. increase productivity
    D. improve communication

75. In CAD process more than one phase of design are closed related and highly interactive. These phases are
    A. recognition and evaluation
    B. analysis and presentation
    C. synthesis and analysis
    D. definition and presentation

76. If the surface of liquid is convex, then cohesion pressure is
    A. negligible
    B. decreased
    C. increased
    D. absent

77. ..... is a device which is employed for transmission of power from one shaft to another through a liquid medium.
    A. Hydraulic intensifier
    B. Hydraulic torque converter
    C. Hydraulic coupling
    D. Hydraulic press

78. Modulus of elasticity is defined as the ratio of
    A. Shear stress to shear strain
    B. Linear stress to linear strain
    C. Linear strain to lateral strain
    D. Lateral strain to lateral stress

79. To measure ..... strain, strain rosetters are used
    A. Linear
    B. Shear
    C. Volumetric
    D. Circular

80. In which of the following terms stiffness is expressed?.
    A. Impact strength
    B. Modulus of elasticity
    C. Hardness number
    D. Mass Density

81. The impact strength of a material is an index of its
    A. Resistance to corrosion
    B. Hardness
    C. Toughness
    D. Impact density

82. .....has no unit.
    A. Surface Tension
    B. Elasticity
    C. Bulk Modulus
    D. Strain

83. The strength of the beam mainly depends on
    A. Bending moment
    B. c.g of section
    C. Section modulus
    D. Its weight

84. Hoop stress set up in a thin cylinder subjected to internal fluid pressure is ..... the longitudinal stress.
    A. Twice
    B. Thrice
    C. Four times
    D. Five times

85. The rivets are generally made of
    A. Brass
    B. Tin
    C. Copper
    D. Steel

86. .....riveting is used in structural units
    A. Chain
    B. Zig- zag
    C. Diamond
    D. Circular

87. Two springs of stiffness S1 and S2, respectively are connected in series. What will be the stiffness of the composite spring
    A. S1 × S2
    B. S1 + S2
    C. S1 / S2
    D. (S1×S2) / (S1+S2)

88. Monel metal is an alloy of .....
    A. Cu and Cr
    B. Ni and Cu
    C. Ni and Cr
    D. Cu, Ni and Cr

89. Nickel is ..... material
    A. Dielectric
    B. Ferro - electric
    C. Ferro - magnetic
    D. Para-magnetic

90. .....test is a non-destructive test
    A. Impact
    B. Charpy
    C. Radiography
    D. Tensile

91. .....is used for bearing liner
    A. Brass
    B. Bronze
    C. Gun metal
    D. Babbit metal

92. In blast furnace ……is used as fuel
    A. Producer gas
    B. Coal
    C. Coke
    D. Diesel

93. The hardest substance occurring in nature
    A. Platinum
    B. Gold
    C. Tungsten
    D. Diamond

94. One tesla is equal to …….
    A. 1 Wb/mm^2
    B. 1 Wb/m
    C. 1 Wb/m^2
    D. 1 mWb/m^2

95. A step-up transformer, increases which of the following parameter?
    A. Power
    B. Frequency
    C. Current
    D. Voltage

96. ……is the greenhouse gas in the earth atmosphere
    A. Oxygen
    B. Hydrogen
    C. Nitrogen
    D. Carbon dioxide

97. A short-circuit is identified by……..
    A. No current flow
    B. Heavy current flow
    C. Voltage drop
    D. Voltage rise

98. Which of the following is "Queuing Theory" associated?
    A. Production time
    B. Inspection time
    C. Sales
    D. Waiting time

99. What for MIS stands……
    A. Management information service
    B. Management information system
    C. Military inspection scheme
    D. Man in sun

100. …….. organization is best suited for steel plants
    A. Line
    B. Staff
    C. Functional
    D. Line, Staff, and Functional

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