**Booklet Series**

# A

**No. of Printed Pages : 16**

**Serial Number of the Test Booklet**

616381

**PAPER CODE**

# PAPER/II-06/DRT

A

Roll No. : _____

Name of the Candidate : _____

| Test Duration : 03 Hours | Total Questions : 100 | Total Maximum Marks : 200 |
|---|---|---|

## INSTRUCTIONS TO CANDIDATES

1. Candidates will be admitted to the Examination Hall/Room on production of their Admit Card and Original ID such as **EPIC/Aadhaar/Driving License** with a view to establish the true identity of the candidate.

2. Candidates shall reach the venue of examination at least 30 minutes in advance and admission will be refused to a candidate who is late by 10 minutes from the start of the examination.

3. No candidate shall be permitted to leave the Examination Hall/Room until the time for the examination is over or until permitted to do so but not until the half of the allotted time.

4. Candidates must use a **BLUE/BLACK** ball point pen ONLY to make entries on the OMR Answer Sheet.

5. The candidates should not bring any articles (other than those specified above) such as books, notes, loose sheets, mobile phones, pagers, digital diaries, calculators, smart watches, etc. inside the Examination Hall/Room. Any candidate found in possession of the said articles will be liable to be de-barred from applying all future examinations to be conducted by the Board.

6. After receiving the Test Booklet with OMR inserted, the candidates may pull out the OMR Answer Sheet and fill in the necessary details. However the candidates are not allowed to break open the seal of the Test Booklet until the invigilator informs them to do so.

7. Mark carefully your Roll Number, Question Booklet Code and Booklet Series on the OMR Answer Sheet and append signature at the appropriate place. Write your Roll Number and **Name in the Question Booklet**. In the absence of the Roll Number and Question Booklet Series on the OMR Answer Sheet, it may NOT be evaluated.

8. The entire Test is of Objective Type Questions comprising 100 questions.

9. Candidates must check that the Question Booklet contains 100 multiple choice questions. If any discrepancy found, report to the invigilator immediately.

10. Every question carries a total of 2 marks each. Candidates will also keep in mind that there is negative marking of $1/3^{rd}$ for every wrong answer.

11. Rough work may be done on the space provided in this Question Booklet, but not on the OMR Answer Sheet.

12. In the event of a mistake made in marking the Roll Number in the OMR Answer Sheet or the OMR Series the candidates will not be given a new OMR Answer Sheet but he/she will be allowed to use whitener or correcting fluid for correction of the Roll Number and the Booklet Series only.

13. **Change of answer will not be permitted in the OMR Answer Sheet. Using of correcting fluid (of any sort) will be treated as wrong attracting negative marking.**

14. The candidates must abide by such instructions as may be specified on the cover of the Answer Paper or instructions to candidates given at the back of the Admit Card. If a candidate fails to do so or indulges in improper conduct, he/she will render himself/herself liable to expulsion from the examination or such other punishment as the Board deemed fit to impose.

15. At the end of the Test, candidates must submit the OMR Answer Sheet to the invigilator on duty. Candidates shall be allowed to take their Question Booklet only after the end of the examination session.

16. Any candidate found to be intoxicated with alcohol and/or psychotropic substances will be expelled from the Examination Hall/Room.

17. Examination centre once opted cannot be changed.

**PLEASE REFER THE BACKSIDE OF THE QUESTION BOOKLET FOR MORE INSTRUCTIONS.**

1. A _____ combines all the functions of the T-square, set-squares, protractor and chinograph, allowing professional draftsmen to produce drawings with ease and rapidity.

   (A) Compass
   (B) Drafting machine
   (C) French curve
   (D) Divider

2. A _____ is a full view of a building, extending from the foundation level to the top of the parapet wall, revealing all construction details as if the building were cut by a vertical plane.

   (A) Isometric
   (B) Section
   (C) Perspective
   (D) None of the above

3. If a line is parallel to one plane and inclined to the other, its projection on the plane to which it is parallel will be in

   (A) True length
   (B) Shortened length
   (C) Increased length
   (D) All of the above

4. Which of the following is not an example for polyhedron solids ?

   (A) Tetrahedron
   (B) Cube
   (C) Octahedron
   (D) Square Lamina

5. Writing of titles, dimensions, notes and other important particulars on a drawing is called

   (A) Drafting
   (B) Dimensioning
   (C) Lettering
   (D) None of the above

6. Find the surface area of a sphere of radius 7 cm.

   (A) 1349 cm$^2$
   (B) 2056 cm$^2$
   (C) 1049 cm$^2$
   (D) 616 cm$^2$

7. _____ command in AutoCAD creates concentric circles, parallel lines, parallel curves.

   (A) Offset
   (B) Extend
   (C) Explode
   (D) Fillet

8. _____ is a curve having major and minor axis with a centre.

   (A) Spline
   (B) Arc
   (C) Ellipse
   (D) Spiral

**9.** In the _____ system of dimensioning, all the dimension figures are placed above the dimension lines without breaking them and are written parallel to them.

(A) Angular

(B) Radial

(C) Aligned

(D) None of the above

**10.** What is the surface area of A0 size sheet ?

(A) 20 Square metre

(B) 10 Square metre

(C) 8 Square metre

(D) 1 Square metre

**11.** In stretcher course of English bond in brickwork, the stretchers have a minimum lap of _____ their length over the headers.

(A) $1/4^{th}$   (B) $3/4^{th}$

(C) $1/15^{th}$   (D) $1/20^{th}$

**12.** The portion of the brick cut across the width is known as

(A) Mitre   (B) Kick

(C) Raking   (D) Bat

**13.** How many lines can be drawn through a point outside a given line parallel to the straight line ?

(A) None   (B) One

(C) Two   (D) Three

**14.** If a line parallel to both HP (Horizontal Plane) and VP (Vertical Plane), it will be _____ to PP (Profile Plane).

(A) Parallel

(B) Inclined

(C) Perpendicular

(D) None of the above

**15.** The height and the slant height of a cone are 21 cm and 28 cm respectively. Find the volume of the cone.

(A) 7546 cm$^3$

(B) 12246 cm$^3$

(C) 1124 cm$^3$

(D) 10646 cm$^3$

**16.** Out of 25 children in a class, 15 are girls. What is the percentage of girls ?

(A) 60%

(B) 90%

(C) 55%

(D) 75%

**17.** When a rectangle is revolved about one of its longer sides, the other longer side generates
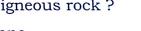
(A) Pyramid

(B) Cone

(C) Cylinder

(D) Sphere

18. Determine the triangle whose lengths of sides are 3 cm, 4 cm, 5 cm.

(A) Equilateral triangle

(B) Right angled triangle

(C) Isosceles triangle

(D) None of the above

19. Which of the following are types of geometric modelling used to create 3D objects in AutoCAD ?

(A) Wireframe Modelling

(B) Surface Modelling

(C) Solid Modelling

(D) All of the above

20. _____ AutoCAD command creates a solid by revolving a two-dimensional object about an axis.

(A) Regen    (B) Revolve

(C) Extend    (D) Array

21. Dodecahedron has _____ equal regular pentagonal surfaces.

(A) 2      (B) 12

(C) 30     (D) 25

22. A _____ is a polyhedron having a plane figure as its base and a number of triangles meeting at a point called vertex or apex.

(A) Cube      (B) Pyramid

(C) Cuboid    (D) Square Prism

23. _____ is the appearance of the building above ground level in vertical plane.

(A) Plan

(B) Master plan

(C) Site plan

(D) None of the above

24. _____ is the part of the building constructed above the plinth level.

(A) Sub Structure

(B) Foundation

(C) Excavation

(D) None of the above

25. Which of the following are the two materials used in stone masonry ?

(A) Stone, Mortar

(B) Stone, Steel

(C) Stone, Bricks

(D) Stone, Coarse aggregate

26. Which of the following is an example of igneous rock ?

(A) Lime stone

(B) Sand stone

(C) Slates

(D) Granite

27. What is the mix ratio for M15 Grade concrete ?

(A) 1 : 2 : 4    (B) 1 : 10 : 20

(C) 5 : 3 : 1    (D) 4 : 2 : 1

28.

29.

30.

31.

28. _____ command increases or decreases the apparent size of objects in the current viewport.

(A) Trim       (B) Copy

(C) Zoom       (D) Donut

29. Horizontal lines are sketched with the motion of the

(A) Fingers only

(B) Wrist and the fore-arm

(C) Elbow only

(D) Shoulder only

30. A _____ is rapidly drawn freehand drawing, a quick way to record and develop an idea but not to be taken as very accurate.

(A) Blue print

(B) Measured drawing

(C) Sketch

(D) Dimetric projection

31. When the solids are cut such that their cut surfaces are inclined to the base are called as

(A) Regular solids

(B) Composite solids

(C) Truncated solids

(D) Interpenetrated solids

32. When the pentagonal lamina (plane surface) is perpendicular to HP the top view of the lamina will appear as a

(A) Line

(B) Square

(C) Rectangle

(D) Triangle

33. _____ creates a realistically shaded image of a three-dimensional wireframe or solid model in AutoCAD.

(A) Sweep       (B) Slice

(C) Hatch       (D) Render

34. Which of the following type of Units are supported in AutoCAD ?

(A) Architectural

(B) Decimal

(C) Fractional

(D) All of the above

35. Which of the following is not a structural component of a building ?

(A) Column

(B) Pavement

(C) Roof

(D) Lintel

36. Which of the following shape is drawn using T-square and 45° set-square only ?
(A) Ellipse
(B) Pentagon
(C) Octagon
(D) None of the above

37. A groove provided on the underside of the projecting elements such as sills, cornices, copings etc. so that rain water can be discharged clear of the wall surface is known as
(A) Throating (B) Nosing
(C) Reveal (D) Jamb

38. Stone masonry is broadly classified into
(A) Block masonry and Brick masonry
(B) Rubble masonry and Ashlar masonry
(C) Dry masonry and Wet masonry
(D) Structural masonry and Ornamental masonry

39. What is the name of a polygon with 8 sides ?
(A) Octagon
(B) Icosahedron
(C) Dodecahedron
(D) Cuboid

40. When a cone is cut by a plane perpendicular to the axis of cone, the conic section will be a
(A) Helical (B) Spiral
(C) Parabola (D) Circle

41. Which of the following material is used as reinforcement in RCC ?
(A) Wood (B) Steel
(C) Sand (D) Cement

42. Which of the following material is not an ingredient of concrete ?
(A) Cement
(B) Glass
(C) Coarse aggregate
(D) Fine aggregate

43. When a plane figure is revolved about one of its sides, a solid, called
(A) Solids of prism
(B) Solids of cube
(C) Solids of revolution
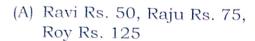(D) Solids of lamina

44. A solid when placed on HP (Horizontal Plane) with its base on HP then the axis will be _____ to HP.
(A) Inclined
(B) Perpendicular
(C) Spline
(D) Parallel

45. If Rs. 250 is to be divided amongst Ravi, Raju and Roy, so that Ravi gets two parts, Raju three parts and Roy five parts. How much money will each get ?
   (A) Ravi Rs. 50, Raju Rs. 75, Roy Rs. 125
   (B) Ravi Rs. 30, Raju Rs. 80, Roy Rs. 140
   (C) Ravi Rs. 20, Raju Rs. 30, Roy Rs. 50
   (D) Ravi Rs. 30, Raju Rs. 90, Roy Rs. 130

46. Unit of sound is
   (A) dB
   (B) kg/m
   (C) $m^3$
   (D) None of the above

47. F7 function key in AutoCAD toggles between
   (A) Line
   (B) Grid
   (C) Curve
   (D) None of the above

48. The midpoint OSNAP icon appears as a _____, indicating the exact middle of a line or arc.
   (A) Triangle
   (B) Square
   (C) Circle
   (D) Pentagon

49. _____ is obtained by cutting a triangular portion of the brick such that half a header and half a stretcher are obtained on the adjoining cut faces.
   (A) Lap
   (B) Toothing
   (C) King closer
   (D) Squint

50. In Flemish bond each course consists of
   (A) Only Headers
   (B) Only Stretchers
   (C) Alternate Headers and Stretchers
   (D) Only Queen Closers

51. A part of the super structure located between the ground level and the floor level is known as
   (A) Chajja
   (B) Lintel
   (C) Plinth
   (D) None of the above

52. _____ is a vertical member of a frame, which is employed to sub-divide a window or a door vertically.
   (A) Reveal      (B) Rebate
   (C) Horn       (D) Mullion

**53.** In building drawing scale of the drawing should be written as

(A) 1 : 100

(B) 1 m : 100 m

(C) 1 cm = 100 cm

(D) 1 m = 100 m

**54.** _____ is used when very minute distances such as 0.1 mm etc. are to be accurately measured or when measurements are required in three units; for example, dm, cm and mm.

(A) Longitudinal scale

(B) Division scale

(C) Diagonal scale

(D) Divider scale

**55.** Which of the following statement is wrong ?

(A) A plane surface is positioned in space parallel to one of the principal planes and perpendicular to the other two.

(B) A plane surface is positioned in space perpendicular to one of the principal planes and inclined to the other two.

(C) A plane surface is positioned in space inclined to all the three principal planes.

(D) A plane surface is positioned in space parallel to all the three principal planes.

**56.** Which view of the orthographic projection shows height of the table ?

(A) Top view

(B) Aerial view

(C) Birds eye view

(D) Front view

**57.** Selling price of a toy car is Rs. 540. If the profit made by shopkeeper is 20%, what is the cost price of this toy ?

(A) Rs. 500     (B) Rs. 450

(C) Rs. 300     (D) Rs. 250

**58.** If a person pays an interest of Rs. 750 for 2 years on a sum of Rs. 4,500, find the rate of interest.

(A) $4\frac{1}{7}\%$     (B) $5\frac{1}{8}\%$

(C) $9\frac{1}{4}\%$     (D) $8\frac{1}{3}\%$

**59.** Which of the following basic geometric commands are used in AutoCAD to create 2D drawings ?

(A) Line

(B) Circle

(C) Rectangle

(D) All of the above

**60.** In a class of 40 students 1/5 of the total number of students like to study English, 2/5 of the total number like to study Mathematics and the remaining students like to study Science. How many students like to study Science ?
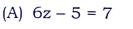
(A) 25

(B) 16

(C) 11

(D) 30

**61.** Write the following statement in the form of equation.

If you subtract 5 from 6 times a number, you get 7.

(A) $6z - 5 = 7$

(B) $5z - 6 = 7$

(C) $5z - 7 = 7$

(D) $7z + 6z + 5 = 7$

**62.** A _____ is a polyhedron having two equal parallel regular polygonal end faces joined by side faces which are parallelograms.

(A) Prism

(B) Hyperbola

(C) Parabola

(D) Cone

**63.** Which geometrical figure can be drawn using two fixed points called foci ?

(A) Circle

(B) Ellipse

(C) Rhombus

(D) Pentagon

**64.** Which of the following is not a regular polygon ?

(A) Square

(B) Heptagon

(C) Pentagon

(D) Circle

**65.** Which of the following is not a standard scale used in engineering drawing ?

(A) 1 : 1

(B) 1 : 50

(C) 1 : 200

(D) 1 : 23

**66.** For sketching pencils are sharpened to a

(A) Conical Point

(B) Spiral Point

(C) Blunt Point

(D) Mitred Point

**67.** Which of the following projection used in engineering drawing ?

(A) Spline projection

(B) Radial projection

(C) Orthographic projection

(D) None of the above

**68.** Thin short dashed lines are drawn to represent _____ edges of the object.

(A) Hidden

(B) Visible

(C) Angled

(D) None of the above

**69.** A connection which is formed when a wall takes a turn is known as

(A) Raking   (B) Perpends

(C) Quoin    (D) Bevelled

**70.** Which of the following is not a type of bond used in brickwork ?

(A) English Bond

(B) Flemish Bond

(C) Header Bond

(D) Spiral Bond

**71.** _____ are mild steel flats, generally bent into Z-shape, used to fix or hold the door frame to the opening and is embedded in the masonry.

(A) Hold fasts   (B) Hinges

(C) Channels    (D) Bolts

**72.** A sloping roof is known as

(A) Coeffered roof

(B) Waffle roof

(C) Pitched roof

(D) Dome roof

**73.** Find the distance travelled by a person if he takes three rounds of a square park of side 75 m.

(A) 900 m    (B) 600 m

(C) 300 m    (D) 150 m

**74.** 1 Quintal is equal to how many kilograms (kg) ?

(A) 10 kg    (B) 100 kg

(C) 1000 kg  (D) 10000 kg

**75.** A line of 5 centimetre is drawn on the drawing sheet to represent an actual length of 10 millimetre. Thus, the scale of the drawing is

(A) 10 : 1   (B) 5 : 1

(C) 1 : 5    (D) 1 : 2

**76.** The _____ are called the three principal planes of projection.

(A) Horizontal Plane, Vertical Plane, Profile Planes

(B) Front Plane, Bottom Plane, Oblique Plane

(C) Left Plane, Right Plane, Back Plane

(D) Perspective Plane, Oblique Plane, Right Plane

**77.** What does R.C.C. stands for in construction ?

(A) Ready Cement Concrete

(B) Reinforced Cement Concrete

(C) Rubble Concrete Course

(D) None of the above

**78.** Which function key is used in AutoCAD toggles between OSNAP ?

(A) F1  (B) F2

(C) F3  (D) F4

**79.** Which of the following is a conic section curve ?

(A) Ellipse  (B) Parabola

(C) Hyperbola  (D) All of the above

**80.** In Parabola Eccentricity is

(A) Equal to 1

(B) Less than 1

(C) Greater than 1

(D) Equal to 8

**81.** In First angle projection, the projection on HP, the Top view is drawn _____ the XY line.

(A) Above

(B) Below

(C) On

(D) None of the above

**82.** The ratio of the length of the drawing to the actual length of the object represented is called the

(A) Enlargement ratio

(B) Measurement

(C) Representative fraction
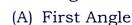
(D) Dimension

**83.** A wooden toy rocket is in the shape of a cone mounted on a cylinder. The height of the entire rocket is 26 cm, while the height of the conical part is 6 cm. The base of the conical portion has a diameter of 5 cm, while the base diameter of the cylindrical portion is 3 cm. If the conical portion is to be painted orange and the cylindrical portion yellow, find the area of the rocket painted with each of these colours.

(A) Orange area = 63.585 cm$^2$,
Yellow area = 195.465 cm$^2$

(B) Orange area = 93.685 cm$^2$,
Yellow area = 103.465 cm$^2$

(C) Orange area = 153.585 cm$^2$,
Yellow area = 795.405 cm$^2$

(D) Orange area = 613.585 cm$^2$,
Yellow area = 185.465 cm$^2$

**84.** Raju's father's age is 5 years more than three times Raju's age. Raju's father is 44 years old. Set up an equation to find Raju's age.

(A) $3y + 5 = 44$

(B) $9y + 7 = 44$

(C) $13y + 5 = 44$

(D) $20y + 3 = 44$

85. Find the area of the sector of a circle with radius 4 cm and angle 30°.
    (A) 9.38 cm$^2$   (B) 7.43 cm$^2$
    (C) 3.69 cm$^2$   (D) 4.19 cm$^2$

86. tan 45° is equal to
    (A) 0          (B) 3
    (C) 8          (D) 1

87. In orthographic projection, visual rays called projectors are _____ to the plane of the projection.
    (A) Inclined    (B) Perpendicular
    (C) Radial      (D) Diverging

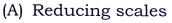88. Bureau of Indian Standards has recommended _____ method of projection for technical drawings.
    (A) First Angle
    (B) Fifth Angle
    (C) Eighth Angle
    (D) Oblique Angle

89. Which of the following is not a type of roof covering used for the pitched roofs ?
    (A) Thatch
    (B) Asbestos cement corrugated sheets
    (C) Corrugated galvanized iron sheets
    (D) RCC terrace slab

90. In building construction DPC stands for
    (A) Damp Prevention Coating
    (B) Damp Proof Course
    (C) Direct Plaster Coating
    (D) Drainage Protection Coating

91. $- 2(x + 3) = 8$. Find x.
    (A) $- 5$          (B) $- 9$
    (C) $- 7$          (D) $- 4$

92. The sum of three times a number and 11 is 32. Find the number.
    (A) 15
    (B) 23
    (C) 46
    (D) 7

93. Drawings of mathematical instruments, watches are drawn to
    (A) Reducing scales
    (B) Enlarging scales
    (C) Divided scales
    (D) Hypothetical scales

94. The _____ is a linear scale constructed to measure angles.
    (A) Scale of chords
    (B) Vernier scale
    (C) Plain scale
    (D) Diagonal scale

95. Which scale ratio represents a full scale drawing ?

(A) 1 : 100

(B) 1 : 50

(C) 1000 : 1

(D) None of the above

96. _____ is obtained by cutting the brick longitudinally in two equal parts.

(A) Queen closer

(B) Header

(C) Arrises

(D) Bed

97. _____ is a projecting portion of building from the lintel of an external wall through 450 or 500 mm provided above the window, door, ventilators or other openings of outer walls for the protection against the sun and rain.

(A) Sunshade

(B) Eave

(C) Cornice

(D) Shaft

98. _____ is a low height wall constructed along the edge of the roof.

(A) Retaining wall

(B) Curtain wall

(C) Parapet wall

(D) None of the above

99. $\cos^2 A + \sin^2 A =$

(A) 35

(B) 4

(C) 1

(D) 13

100. _____ at a section in a beam is the force that tries to shear off the section and is obtained as the algebraic sum of all the forces including the reactions acting normal to the axis of the beam either to the left or to the right of the section.

(A) Bending Moment

(B) Axial Force

(C) Shear Force

(D) Torsion