

Tracer (LSGD)
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1. Which of the following statements are correct for Rhomboid?

- i. Opposite sides are equal and parallel
- ii. All sides are equal
- iii. Angles are not right angle
- iv. Angles are right angle

A) i, iii

B) i, iv

C) ii, iii

D) ii, iv

2. Actual length of a room is 10 m and is represented by 200 mm in the drawing. Then the scale of the drawing is

A) 1 : 100

B) 1 : 50

C) 100 : 1

D) 50 : 1

3. In first angle projection

- i. Top view comes below front view
- ii. Front view comes below top view
- iii. Right side view drawn to the left side of front view
- iv. Right side view drawn to the right side of front view

A) i, iii

B) i, iv

C) ii, iii

D) ii, iv

4. The length to height ratio of closed filled arrow head is

A) 1 : 3

B) 3 : 1

C) 1 : $\sqrt{2}$

D) $\sqrt{2}$: 1

5. While calculating the quantity of brick work, no deduction or addition shall be made for the following

- i. Opening upto 1 sq m in section
- ii. Ends of joints, beams, lintels, posts, rafter, corbel, steps etc.
- iii. Opening upto 0.1 sq m in section
- iv. Wall plates and bed plates, bearing of slab, chajjah where the thickness does not exceed 10 cm

A) i, ii, iii

B) i, ii, iv

C) ii, iii, iv

D) All of the above

6. While preparing estimate, plastering bands of 30 cm or below are measured in

A) Running meter

B) Square meter

C) Cubic meter

D) Number

7. Which of the following cost is not included in rate analysis of an item?

A) Contractor's profit

B) Overhead cost

C) Land cost

D) Stationary, Printing, Travelling expenses etc.



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8. Quantity of dry materials required for one cu m of finished concrete in M 15 grade is

A) Cement – 0.22 cu m, Sand – 0.44 cu m, Aggregate – 0.88 cu m

B) Cement – 0.50 cu m, Sand – 1.00 cu m, Aggregate – 2.00 cu m

C) Cement – 1.00 cu m, Sand – 2.00 cu m, Aggregate – 4.00 cu m

D) Cement – 0.10 cu m, Sand – 0.20 cu m, Aggregate – 0.40 cu m

9. An instrument made of lead bar enclosed in rubber and can be bent into any shape to draw smooth curve passing through any given points

A) French curve

B) Flexible curve

C) Planimeter

D) Pentagraph

10. The length to width ratio of drawing sheet is

A) 1 : 3

B) 3 : 1

C) 1 : $\sqrt{2}$

D) $\sqrt{2}$: 1

11. Which type lines are used for drawing diagonal lines, hatching etc.?

A) Type A

B) Type B

C) Type C

D) Type D

12. In a drawing, the letters and numbers are designated by their

A) Height

B) Top width

C) Bottom width

D) Thickness

13. Unit of measurement for DPC

A) Running meter

B) Square meter

C) Cubic meter

D) Number

14. What is printed list of rates of various items of work maintained by the engineering department?

A) Schedule of rates

B) Analysis of rates

C) Item rates

D) Market rates

15. The total cost of construction including land or the original total amount required to possess a property

A) Capitalized value

B) Market value

C) Book value

D) Capital cost

16. The gradual exhaustion of the usefulness of a property due to structural deterioration, use, life, wear and tear, decay and obsolescence.

A) Sinking fund

B) Depreciation

C) Scrap value

D) Market value

17. Which of the following standard should be considered in planning?

- A) IS codes for planning
- B) ISI
- C) NBC 2005
- D) Local building – Bye laws

18. Which of the following is used as escape elements in building for fire safety?

- A) Lobbies
- B) Strong room
- C) Floors
- D) Outer walls

19. Which is an item rate estimate?

- A) Plinth area
- B) Annual repair
- C) Cubical content
- D) Preliminary

20. Which estimate is prepared while the original sanctioned estimate is exceeded by more than 5%?

- A) Supplementary
- B) Extension and improvement
- C) Revised
- D) Plinth area

21. Which steel is used for manufacture of structural steel?

- A) Mild steel
- B) Medium carbon steel
- C) High carbon steel
- D) All of these

22. Brass is an alloy of

- A) Copper and tin
- B) Copper and zinc
- C) Tin and lead
- D) Copper and lead

23. When cement is added to lime mortar to improve quality and achieve early strength

- A) Gypsum mortar
- B) Lime mortar
- C) Gauged mortar
- D) All of these

24. Period of natural seasoning of timber in presence of air

- A) 3-6 months
- B) 6-12 months
- C) 1-2 year
- D) 2-4 year

25. The liquid substance which holds the ingredients of a paint in liquid suspension

- A) Base
- B) Vehicle
- C) Drier
- D) Solvent

26. Cast iron manufacture in

- A) Cupola furnace
- B) Blast furnace
- C) Both A) and B)
- D) None of these

27. Harmful ingredients in brick earth

- A) Vegetation and organic matter
- B) Pebbles
- C) Alkalies
- D) All of these

28. Who was the inventor of artificial cement?

- A) John Smeaton
- B) Karl Terzaghi
- C) Thomas Telford
- D) Joseph Aspidin

29. The quantity of gypsum added in cement to

- A) Initiate the setting
- B) Accelerate the setting
- C) Retard the setting
- D) No role in setting action

30. The test is done to find out the rate of wear of stones which are used in road construction

- A) Attrition test
- B) Acid test
- C) Crystallisation test
- D) Hardness test

31. The slump value for normal RCC work

- A) 20-40 mm
- B) 40-50 mm
- C) 70-80 mm
- D) 80-150 mm

32. Which lime used for plastering and whitewashing?

- A) Fat lime
- B) Poor lime
- C) Hydraulic lime
- D) None of these

33. The transverse member used in bricklayer scaffolding one end of which is placed into the hole on the wall

- A) Standard
- B) Putlog
- C) Brace
- D) Ledger

34. The minimum load which may cause the failure of foundation is called

- A) Improving bearing capacity
- B) Safe bearing capacity
- C) Ultimate bearing capacity
- D) Failure of safety

35. Provision of a layer of water repellent material between the source of dampness and part of structure adjacent to it is called

- A) Cavity wall
- B) Integral treatment
- C) Surface treatment
- D) Membrane damp proofing

36. The space between the back of the arch ring and the horizontal plane tangent to the crown

- A) Spandril
- B) Haunch
- C) Intrados
- D) Skewback

37. The roof which slopes two direction is

- A) Lean to roof
- B) Gable roof
- C) Duck roof
- D) Hipped roof

38. The temporary structure constructed to remove water from the construction area

- A) Cofferdam
- B) Scaffolding
- C) Underpinning
- D) Shoring

39. A combined footing is commonly used when

- A) Under a set of walls
- B) Under a set of columns
- C) Two columns are spaced close to each other
- D) Two columns are spaced far apart

40. For cantilever beam main reinforcement is placed at

- A) Bottom
- B) Center
- C) Support
- D) Top

41. The clear cover for foundation slabs and beams

- A) 25 mm
- B) 15 mm
- C) 40 mm
- D) 50 mm

42. Which type of welding is used when the members to be connected overlap each other?

- A) Fillet weld
- B) Butt weld
- C) Lap weld
- D) Seamed weld

43. Going in cm + $(2 \times \text{Rise in cm})$ should be

- A) 400-450
- B) 40-45
- C) 60-65
- D) 30-40

44. The topmost horizontal member of a door frame is

- A) Style
- B) Horn
- C) Post
- D) Head

45. The tool used for pulling out nails, tack from wood

- A) Wheel brace
- B) Sash cramp
- C) Pincer
- D) Gimlet

46. In which type of stair, the bottom wide flight is divided at a landing into two narrower flights which branch off to the right and left

- A) Circular stair
- B) Geometrical stair
- C) Bifurcated stair
- D) Newel stair

47. The height of slump cone is

- A) 30 cm
- B) 20 cm
- C) 50 cm
- D) 25 cm

48. The method by which compressive stresses are induced in the structure artificially before it is loaded

- A) Compacted concrete
- B) Post stressed concrete
- C) Fire resisting concrete
- D) Pre stressed concrete

49. The horizontal course of masonry project from the face of wall at every floor or sill level

- A) Frieze
- B) Cornice
- C) Corbel
- D) String course

50. The cut underside of a projected course of masonry which is provided to check the creepage of rain water on the underside of projected portion

- A) Throating
- B) Weathering
- C) Coping
- D) Gutter

51. A wooden headed hammer used for wooden headed chisel

- A) Claw hammer
- B) Mallet
- C) Iron hammer
- D) Spalling hammer

52. The type of bond in which the bricks are laid in course inclined at 45° in two directions from the center

- A) Diagonal bond
- B) Garden wall bond
- C) Dutch bond
- D) Herring bone bond

53. The canal, which is aligned along the ridge

- A) Contour canal
- B) Side slope canal
- C) Watershed canal
- D) Perennial canal

54. The main purpose of providing a surge tank in a hydroelectric power plant is

- A) To store excess water for irrigation
- B) To reduce the water hammer pressure formed in the penstock
- C) To increase the velocity of water in the penstock
- D) To regulate the temperature of water in the reservoir

55. The purpose of applying the principle of working from whole to part in surveying is

- A) To reduce the cost of survey work
- B) To prevent the accumulation of errors
- C) To complete the survey quickly
- D) To avoid the use of advanced instruments

56. Which of the following statements is/are correct?

- i. The direction of true meridian through a point can be established by astronomical observations.
- ii. True bearing of a line is the horizontal angle that it makes with the magnetic meridian.
- iii. The direction of the magnetic meridian can be established with the help of a magnetic compass.
- iv. The magnetic bearing of a line is measured using a magnetic compass.

- A) Only i and ii
- B) Only i, ii and iii
- C) Only i, iii and iv
- D) Only i, ii and iv

57. A non-circular curve introduced between a straight and a circular curve or between two branches of a compound curve or a reverse curve is known as

- A) Compound curve
- B) Reverse curve
- C) Horizontal curve
- D) Transition curve

58. Turning the telescope about its vertical axis in the horizontal plane in a theodolite is known as

- A) Transiting
- B) Plunging
- C) Reversing
- D) Swinging

59. The angle between the preceding line and the succeeding line is called

- A) Deflection angle
- B) Direct angle
- C) Ordinary angle
- D) Vertical angle

60. The space between two lines in a double-line field book is reserved for

- A) Entering offsets
- B) Entering chainages
- C) Entering angles
- D) Entering area

61. In differential levelling, the arithmetic check is given by

- A) $\sum B.S - \sum F.S = \text{Last R.L} - \text{First R.L}$
- B) $\sum B.S + \sum F.S = \text{Last R.L} - \text{First R.L}$
- C) $\sum B.S - \sum F.S = \text{First R.L} - \text{Last R.L}$
- D) $\sum B.S + \sum F.S = \text{First R.L} - \text{Last R.L}$

62. Which of the following is considered the most accurate method of interpolation of contours?

- A) Estimation method
- B) Graphical method
- C) Arithmetical method
- D) Direct method

63. The degree of precision in calculating irregularly shaped areas using Simpson's rule and the Trapezoidal rule can be increased by

- A) Decreasing the number of ordinates
- B) Increasing the intervals
- C) Increasing the length of ordinates
- D) Increasing the number of ordinates

64. Rankine's method of deflection angle is particularly useful for setting out

- A) A circular curve of small radius
- B) A circular curve of long length and large radius
- C) A transition curve only
- D) A vertical curve in road design

65. GPS measurements are referenced to which geodetic system?

- A) NAD27
- B) WGS72
- C) WGS84
- D) Indian Datum

66. The resection method in plane table surveying is used to

- A) Locate new points from a known station
- B) Determine the position of station by sighting known points
- C) Measure distances by radiation
- D) Traverse along a polygonal path

67. In a Total Station, measurement of distance is accomplished by

- A) Using a steel tape directly
- B) Modulated microwave or infrared carrier signal
- C) Observing astronomical directions
- D) Magnetic compass readings

68. Elimination of parallax in a levelling instrument is achieved by

- A) Focusing the eyepiece only
- B) Focusing the objective only
- C) Focusing both the eyepiece and the objective
- D) Adjusting the tripod legs

69. Which of the following statements is/are correct?

- i. Crop period is the total time that elapses between the sowing of the crop and its harvesting.
- ii. Crop period represents the total time during which the crop remains in the field.
- iii. Crop period is the total time between the first watering done for the preparation of the land for sowing of a crop and the last watering done before its harvesting.
- iv. Crop period is essential for determining the total water requirement of a crop.

- A) Only i and ii
- B) Only ii and iii
- C) Only i and iv
- D) Only i and iii

70. Capillary water in soil refers to

- A) Water held very tightly by soil particles and unavailable to plants

B) Water present in excess of hygroscopic water, held in soil pores by molecular attraction

- C) Water that drains freely through the soil due to gravity

D) Water vapor present in the atmosphere around soil particles

71. The volume of water that is temporarily stored in the permeable bank of a reservoir when the reservoir fills and drains out as the water level in the reservoir is lowered is known as

- A) Valley storage
- B) Surcharge storage
- C) Dead storage
- D) Bank storage

72. Groynes (spurs) are primarily constructed to

- A) Increase river velocity
- B) Protect banks from erosion
- C) Store flood water
- D) Divert groundwater flow

73. Two vertical poles are standing on a same horizontal line at a distance apart. One is 36 m height and other is 62 m, in height. If the smaller pole make a shadow of length 20.5 m. What will be the length of shadow of larger pole?

- A) 108.87 m
- B) 11.9 m
- C) 35.3 m
- D) 34.44 m

74. Which is more elastic?

- A) Rubber
- B) Glass
- C) Wood
- D) Steel

75. Find the perimeter of sector of circle with radius 7 cm and sector angle 120° .

- A) 14.67 cm
- B) 28.67 cm
- C) 51.33 cm
- D) 21.67 cm

76. If efficiency of a lifting machine is kept constant, its velocity ratio is directly proportional to its

- A) Friction
- B) Mechanical advantage
- C) Efficiency
- D) Effort

77. The temperature of a substance is 28°C . What is the temperature of same substance in Kelvin scale?

- A) 28 K
- B) 401 K
- C) 301 K
- D) 0.28 K

78. A body of mass 2 kg is thrown upward with an initial velocity of 20 m/s. After 2 seconds its kinetic energy will be (take $g = 10 \text{ m/s}^2$)

- A) 0 J
- B) 1600 J
- C) 40 J
- D) 16 J

79. Which command is used to customize your shortcut keys in Auto CAD?

- A) CSK
- B) CCS
- C) CUI
- D) CIU

80. Which of the following is a way to add a viewport to a layout in Auto CAD?

- A) Using MVIEW command
- B) Using VVIEW command
- C) Using LAYOUT command
- D) Using MPORT command

81. In which tool bar we can find erase, trim in Auto CAD?

- A) Title bar
- B) Standard tool bar
- C) Draw area
- D) Modify tool bar

82. Which short key is used to close the currently active program in Auto CAD?

- A) Ctrl + X
- B) Alt + F4

C) ARU

D) ATE



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83. Which of the following 'Function Key' can be used for 'Toggles between grid on and off'?

- A) F10
- B) F6
- C) F7
- D) F8

84. Function defined for 'Ctrl + Y' key stroke is

- A) Undo
- B) Ortho on/off
- C) Co-ordinate display on/off
- D) Redo

85. What is the full form of UCS system?

- A) User CAD System
- B) User Co-ordinate System
- C) User CADD System
- D) User Co-operative System

86. What is the primary purpose of using layers in 2D drafting?

- A) To organise and manage complex drawing
- B) To create 3D models
- C) To change background
- D) To add text to drawing

87. The presence of inorganic substances like clay, pebbles, sand, silt etc. are

- A) Chemical impurities
- B) Bacteriological impurities
- C) Physical impurities
- D) None of these

88. The liquid which passes out of the outlet pipe of septic tank is

- A) Effluents
- B) Sludge
- C) Garbage
- D) Refuse

89. It includes all type of house waste and garbage in dry form

- A) Effluents
- B) Sludge
- C) Garbage
- D) Refuse

90. It is safe water, which is bacteriologically and chemically pure

- A) Potable water
- B) Distilled water
- C) Wholesome water
- D) Safe water

91. This types of joint is mostly used for joining concrete and asbestos pipes of large diameter

- A) Collar joint
- B) Flexible joint
- C) Screwed joint
- D) Mechanical joint

92. They are automatic valves, they allow the flow in one direction only

- A) Relief valve
- B) Reflux valve
- C) Scour valve
- D) None of the above

- 93.** The art of providing an outward slope of 1 in 20 to the treads of wheels of rolling stock, is
- A) Tilting of rails
B) Creep of rails
C) Coning of wheels
D) Wear of wheels
- 94.** The plates which are used to rail joints to maintain the continuity of rails in a track
- A) Fish plates
B) Bearing plates
C) Covering plates
D) Base plate
- 95.** The end supports of a bridge superstructure is
- A) Pier
B) Abutment
C) Wing wall
D) Retaining wall
- 96.** The heading up of water above its normal level while passing under the bridge is
- A) Scour
B) Free board
C) Afflux
D) Clearance
- 97.** The curve having its radius varying gradually from an infinite to a finite value equal to that of the circular curve to be connected or vice versa is
- A) Transition curve
B) Spiral curve
C) Casement curve
D) All of these
- 98.** The gradient on which a motor vehicle moving with a constant speed, continues to descend with the same speed without any application of power or breaks is
- A) Ruling gradient
B) Floating gradient
C) Limiting gradient
D) Average gradient
- 99.** The main highways running through the length breadth of the country connecting major ports, foreign highways and capital of states, etc. are known as
- A) National highway
B) State highway
C) Major district roads
D) Village road
- 100.** The road pavement which can change their shape to some extent without rupture are known as
- A) Rigid pavements
B) Flexible pavements
C) Both A) and B)
D) None of these