Maximum : 100 marks

Time : 1 hour and 15 minutes

1. If the area of a circle is 154 cm^2, find its perimeter :

   (A) 44 cm (B) 48 cm

   (C) 66 cm (D) 22 cm

2. If the perimeter of a rectangle is reduced to its half, then its area will be :

   (A) Reduced to its half (B) Reduced to its $1/4^{th}$

   (C) Reduced to its $3/4^{th}$ (D) Area remains the same

3. The cost of painting the interior of a room of dimensions 8 m length, 6 m width and 3 m height, if the cost of labour and paint is Rs. 10 per square m :

   (A) Rs. 840 (B) Rs. 820

   (C) Rs. 860 (D) Rs. 800

4. A scalene triangle is a triangle :

   (A) With equal length for the three sides

   (B) With two sides of equal length and third side of different length

   (C) With unequal length for the three sides

   (D) None of these

5. Find out the dimensions and perimeter of a square plot, if its area is equivalent to the area of a rectangular plot of dimensions 90 m length and 40 m width :

   (A) 40 m × 40 m, 160 m (B) 60 m × 60 m, 360 m

   (C) 80 m × 80 m, 320 m (D) 60 m × 60 m, 240 m

6. The volume of a cone is :

   (A) $(1/4)\pi d^2 h$ (B) $(1/12)\pi d^2 h$

   (C) $(4/8)\pi d^3$ (D) $(2/8)\pi d^3$

7. The number of standard bricks required to construct a brick wall of length 6 m, height 3 m and thickness 20 cm is :

   (A) 1500 Nos (B) 1800 Nos

   (C) 3000 Nos (D) 2500 Nos

8. Capacity factor is :

(A) The ratio of average discharge of a canal at any point to the full supply discharge at the same point

(B) The ratio of average discharge to the number of days the canal has actually run

(C) The ratio of duty at the outlet to the discharge

(D) None of these

9. Fall of moisture from atmosphere to the earth surface in any form :

(A) Evaporation (B) Run-off

(C) Transpiration (D) Precipitation

10. Groynes are :

(A) The structures constructed parallel to the direction of flow and extend both upstream and downstream of the abutments

(B) The structures constructed transverse to the river flow and extend from bank to the river

(C) The irrigation work constructed for passing the canal water over the drainage.

(D) None of these

11. 2.5 Acres is :

(A) 1.752 Hectares (B) 2.212 Hectares

(C) 1.012 Hectares (D) 2.512 Hectares

12. Find the duty of paddy in Hectares/Cumec, if depth of water over area required = 1500 mm and base period is = 150 days :

(A) 86.4 (B) 864

(C) 8.64 (D) 8640

13. Maximum flood discharge in Cumecs for South Indian catchments by Ryve's formula

(A) $Q = CM^{2/3}$ (B) $Q = CM^{3/4}$

(C) $Q = CM^{1/2}$ (D) $Q = 124\,A/(A+10.4)^{1/2}$

14. When a column of water is standing against the face of any irrigation structure and if the structure happens to be one constructed on permeable foundations, the water starts moving under the foundations with certain amount of pressure. This is called :

(A) Creep (B) Uplift

(C) Percolation (D) Scour

15. Among the following, which one is an example for non-recording type rain gauge?

(A) Weighing bucket rain gauge
(B) Float type rain gauge
(C) Tipping bucket rain gauge
(D) Symon's rain gauge

16. To prevent overtopping of a dam during the period of peak flood, a sufficient margin is left between FRL and top of the dam. It is known as :

(A) Dead storage
(B) Free board
(C) Live storage
(D) Spillway

17. Canal escapes are :

(A) Structures constructed to dispose off excess water from the canals to some natural drains
(B) A vertical step in the channel bed
(C) An irrigation structure constructed for passing the canal water over the drainage
(D) None of these

18. The major axis of an ellipse is :

(A) The line perpendicular to the tangent at any point of the ellipse
(B) The line passing through the foci and terminated by the ellipse
(C) The line tangential at any point of the ellipse
(D) None of these

19. The curve generated by a point on the circumference of a circle which rolls without slipping along a straight line is called :

(A) Spiral
(B) Trochoid
(C) Cycloid
(D) Involute

20. Visible edges are represented by :

(A) Continuous thin lines
(B) Dashed thick lines
(C) Thick chain line
(D) Continuous thick lines

21. Dimension on the drawing can be found out as :

(A) R.F × Actual dimension
(B) R.F ÷ Actual dimension
(C) Actual dimension ÷ R.F
(D) R.F × Maximum length to be read

22. For a regular pentagon, the interior angle formed is :

(A) 120°
(B) 90°
(C) 72°
(D) 60°

23. For an ellipse, the sum of the distances to a point on the curve from the foci is :

(A) Not a constant

(B) Constant and is equal to the length of the major axis

(C) Constant and is equal to the length of minor axis

(D) None of these

24. The length to width ratio of a drawing sheet is :

(A) $2^{1/2}:1$ (B) $1:2^{1/2}$

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

25. Normally earthwork is estimated for :

(A) 30 m lead and 1 m lift (B) 20 m lead and 1.5 m lift

(C) 50 m lead and 1.5 m lift (D) 30 m lead and 1.5 m lift

26. The approximate cost of a building having plinth area of 300 Sq.m @Rs 1500 per Sq.m works out as :

(A) Rs. 3,25,000 (B) Rs. 3,75,000

(C) Rs. 4,50,000 (D) Rs. 4,00,000

27. The amount provided in the estimate and bill of quantities for some specialized work to be done by a specialist firm whose details are not known at the time of preparing estimate is called :

(A) Float value (B) Fixed cost

(C) Provisional sum (D) Prime cost

28. The measurement is done in Sq.m for :

(A) Thin partition wall

(B) Wood work for door and window frame

(C) Cement Concrete

(D) Sand filling

29. Pick the correct statement from the following :

(A) Steel work is measured in numbers (B) Earthwork is measured in Sq.m

(C) R.C.C is measured in Cubic meter (D) All the above

30. The quantities of brickwork and plastering required in a wall 5 m long, 3 m high and 20 cm thick are :

(A) 3 Cu.m and 36 Sq.m (B) 3.5 Cu.m and 30 Sq.m

(C) 3 Cu.m and 30 Sq.m (D) 30 Cu.m and 30 Sq.m

31. The centre line length of a single room building of size 6.5 × 5 m and wall thickness 30 cm is :

(A) 24.0 m
(B) 24.2 m
(C) 24.6 m
(D) 24.8 m

32. The data necessary to prepare an estimate is :

(A) Specification
(B) Drawing
(C) Rate
(D) All the above

33. Comparative statement is necessary for the preparation of :

(A) Cubical content estimate
(B) Plinth area estimate
(C) Revised estimate
(D) Item rate estimate

34. The term used to indicate the actual amount incurred in producing a commodity which possess some value :

(A) Value
(B) Price
(C) Rate
(D) Cost

35. The rate of wear of stones which are used in road construction can be found out by :

(A) Hardness test
(B) Attrition test
(C) Acid test
(D) Crushing test

36. The lower the water cement ratio :

(A) The lower the strength and workability
(B) The greater the strength and workability
(C) The lesser the strength and workability
(D) The greater the strength and lesser the workability

37. Vertical joints separating the bricks by mortar is :

(A) Perpend
(B) Arrises
(C) Lap
(D) Closer

38. ISMC indicates :

(A) I sections
(B) Channel sections
(C) Angle section
(D) T-section

39. A waste from the manufacture of pig iron is used for which cement?

(A) High alumina cement
(B) Sulphate resisting cement
(C) Blast furnace slag cement
(D) Acid resisting cement

40. White lead in paint acts as a :

(A) Vehicle
(B) Thinner
(C) Base
(D) Drier

41. The process by which timber is cut and sawn into suitable sections is known as :

(A) Conversion
(B) Seasoning
(C) Preservation
(D) None of these

42. A stiff and extra stiff concrete mix is indicated by :

(A) 10 mm to 30 mm slump value
(B) No slump
(C) 40 mm to 150 mm slump value
(D) Slump value Over 150 mm

43. The number of risers and treads required for a doglegged stair, if the height upto the top of the roof slab is 300 cm and rise = 15 cm :

(A) 20 Risers and 19 Treads
(B) 19 Risers and 20 Treads
(C) 20 Risers and 20 Treads
(D) 19 Risers and 19 Treads

44. Rind Galls are :

(A) The roots of small branches of tree
(B) The splits occurring in the centre of the tree
(C) Swelling caused by the growth of layers over the wound
(D) Curved splits which separate the annual rings

45. The range of camber of cement concrete road surface in the heavy rainfall area to light rainfall area is :

(A) 1 in 50 to 1 in 60
(B) 1 in 33 to 1 in 40
(C) 1 in 25 to 1 in 33
(D) 1 in 10 to 1 in 25

46. Width of roadway at plain and rolling terrain for National and State highways is :

(A) 7.5 m
(B) 9 m
(C) 12 m
(D) 4.75 m

47. PIEV Theory is related to :

(A) Stopping distance
(B) Reaction Time of the driver
(C) Sighting distance
(D) Perception Time

48. By Impact test, we can evaluate :

(A) Particle shape of aggregate
(B) Resistance to wear
(C) Durability of stone
(D) Toughness of stone

49. The softening point of various Bitumen grades used in paving jobs vary between :

(A) 75°C to 150° C
(B) 20° C to 35° C
(C) 35°C to 75° C
(D) 0° C to 10° C

50. In Spiral curve :

(A) The radius is inversely proportional to the length
(B) The rate of change of centrifugal acceleration is uniform throughout its length
(C) Is an ideal transition curve
(D) All the above

51. The process of cutting and removing soil, transporting and dumping it as a spoil bank is :

(A) Excavation
(B) Embankment
(C) Benching
(D) Banking

52. The road intersection where all converging vehicles are forced to move round a large central area in clockwise direction :

(A) Unchannelized intersection
(B) Channelized intersection
(C) Rotary Island
(D) None of these

53. The map showing the general topography of the area is known as :

(A) Key map
(B) Survey map
(C) Detailed plan
(D) Index map

54. Right of way is :

(A) The bottom width of excavation for road
(B) The top width of embankment for road
(C) The area occupied by the vehicle on the road
(D) The area of land acquired for the road along its alignment

55. The area and centroid of a semicircular lamina of diameter D is :

(A) $\prod D^2/4$ and $4D/3\pi$
(B) $\prod D^2/8$ and $4D/3\pi$
(C) $\prod D^2/8$ and $2D/3\pi$
(D) $\prod D^2$ and $2D/\pi$

56. The path travelled by a projectile in air is :

(A) Ellipse
(B) Parabola
(C) Hyperbola
(D) Circle

57. Distance travelled by a car moving at a velocity of 20 m/s if it stops in 4 seconds :

(A) 60 m (B) 45 m

(C) 40 m (D) 50 m

58. If two forces 8 KN and 6 KN act at right angles to each other, their resultant force will be :

(A) 14 KN (B) 10 KN

(C) 2 KN (D) 48 KN

59. Coplanar Concurrent forces are :

(A) Which meet at one point and their lines of actions lie in same plane

(B) Which do not meet at one point and their lines of actions lie in the same plane

(C) Which meet at one point and lines of actions lie in different planes

(D) None of these

60. Moment of Inertia of a square of side 12 cm is :

(A) $1928\,cm^4$ (B) $1828\ cm^4$

(C) $1628\ cm^4$ (D) $1728\ cm^4$

61. Momentum is :

(A) The product of mass and velocity

(B) The product of mass and acceleration

(C) The product of force and time

(D) The product of displacement and acceleration

62. If the algebraic sum of the horizontal and vertical components of the forces and moment at a point is zero then the body will be :

(A) In non uniform motion (B) In simple harmonic motion

(C) In accelerated motion (D) In equilibrium

63. If a particle starts from rest and moves in a straight line such that its displacement is given by $S = 3t^3 - 2t^2 - 1$, then the acceleration of the particle after 1 second will be :

(A) $4\,m/sec^2$ (B) $10\,m/sec^2$

(C) $14\,m/sec^2$ (D) $8\,m/sec^2$

64. The recoil of gun is an example of :

(A) Newton's second law of motion (B) Newton's third law of motion

(C) Newton's first law of motion (D) None of these

65. In quadrantal bearing system, the angle is measured from :

(A) North to East
(B) North to West
(C) South to East
(D) All of these

66. The temperature at which water boils is taken as the basis for determining the height of a point in :

(A) Hypsometry
(B) Barometric levelling
(C) Precise levelling
(D) Trigonometrical levelling

67. In the case overhanging cliffs :

(A) Two consecutive contours are parallel
(B) Two consecutive contours intersect in a contour map
(C) Two consecutive contours coincide each other
(D) All of these

68. 250 m^2 indicates :

(A) 2.5 Are
(B) 2.5 Acre
(C) 2.5 Hectare
(D) None of these

69. Fathometer is used :

(A) To find the depth of water upto the bed in oceans
(B) To find the remote height of object
(C) To measure the slope
(D) None of these

70. The height of instrument and the reduced level of a point, if its foresight reading is 1.845 m and the back sight reading on a bench mark of R.L 250.000 m is 2.985 m are :

(A) 252.985 m and 252.845 m
(B) 251.845 m and 251.140 m
(C) 252.985 m and 251.140 m
(D) 250.845 m and 251.140 m

71. Lehmann's rule is associated with :

(A) Chain Survey
(B) Compass survey
(C) Theodolite survey
(D) Plane table survey

72. The angle of dip at the poles of earth is :

(A) 0°
(B) 45°
(C) 30°
(D) 90°

73. Alidade is used for :

(A) Sighting objects in plane table survey

(B) Sighting the levelling staff in levelling

(C) Marking stations in chain survey

(D) Getting North direction

74. The magnetic bearing of Sun at noon was 140°. The magnetic Declination is :

(A) 40°E (B) 40°W

(C) 40°S (D) 40°N

75. Sag correction is :

(A) Always positive (B) Always negative

(C) Always zero (D) None of these

76. Locating points on a given contour gradient can be done by :

(A) Planimeter (B) Clinometer

(C) Pentagraph (D) Ghat tracer

77. Invar tape is made of an alloy of :

(A) Nickel (64%) and Steel (36%) (B) Nickel (36%)and Copper (64%)

(C) Nickel (26%) and Steel (74%) (D) Nickel (36%) and Steel (64%)

78. In an open traverse ABC, if the fore bearing of the line AR is 240° 30′ and the included angle at B measured in clockwise direction is 120° 15′ the bearing of the line BC will be :

(A) 180° 15′ (B) 179° 45′

(C) 179° 15′ (D) 180° 45′

79. When chaining is impossible due to undulations of the ground the horizontal and vertical distances are measured using?

(A) Clinometer (B) Box sextant

(C) Eidograph (D) Subtense bar

80. Simpson's rule can be applied only when :

(A) The number of offsets are in even number

(B) The number of offsets are in odd number

(C) The number of offsets are either in even or in odd number

(D) None of these

81. Guwahati is situated on which of the following bank of the river?
(A) Brahmaputra
(B) Yamuna
(C) Ganga
(D) Mahanadi

82. Silvassa is the capital of which Union Territories of India :
(A) Daman and Diu
(B) Lakshadweep
(C) Dadar and Nagar Haveli
(D) Andaman and Nicobar Islands

83. Which among the following is the least population State in India?
(A) Goa
(B) Sikkim
(C) Manipur
(D) Mizoram

84. The Central Banking function in India are performed by the :
(A) Central Bank of India and State Bank of India
(B) Central Bank of India and Reserve Bank of India
(C) Reserve Bank of India
(D) Central Bank of India, State Bank of India and Reserve Bank of India

85. Which of the following dispute made Gandhiji to undertake a FAST for the first time?
(A) Minto-Morly Reform
(B) Punjab unrest
(C) Anti Rowlatt Agitation
(D) Ahamadabad mill strikes

86. In which sector relates Deen Dayal Upadhyaya Gram Jyothi Yojana?
(A) Electrification
(B) Housing
(C) Rural Wage Employment
(D) Rural Power Supply

87. In which place Gandhiji began his active involvement in Indian politics?
(A) Dandi
(B) Chittagong
(C) Champaran
(D) Kheda

88. The Mid-Day Meal scheme has been launched by the Union Minister of :
(A) Human Resource Development
(B) Social Welfare
(C) Rural Development
(D) Finance

89. Hail the Soldier, Hail the Farmer. Who said this?
(A) Mahatma Gandhi
(B) Bhagat Singh
(C) Lal Bahadur Sastri
(D) Chandrasekhar Azad

90. Which is the southern most river of kerala?
(A) Karamana river
(B) Neyyar river
(C) Vamanapuram river
(D) Ayiroor river

91. Who started "Panthibhojanam" (Inter-dining) in Kerala?
(A) Thycaud Ayya
(B) Sree Narayana Guru
(C) Vaikunda Swamikal
(D) Chavara Kuriakos Achan

92. Who was known as the "Political Father of Ezhavas"?
(A) Sree Narayana Guru
(B) Dr. Palpu
(C) Kumaranasan
(D) Sahodaran Ayyappan

93. He ordered "to start a school along with every church (Palli)" who ordered :
(A) Pampady John Joseph
(B) St. Vincent Paul
(C) Kuriakose Elias Chavara
(D) Joseph Mundasseri

94. Who was the leader of first strike of Agriculture Labourers in Travancore?
(A) K. Madhavan
(B) Ayyankali
(C) Pattom Thanupillai
(D) Mannathu Padmanabhan

95. Who founded Anandamatham (religion of bliss)?
(A) Brahmananda Sivayogi
(B) Vagbhadannandan
(C) Vaikunda Swamikal
(D) Thycaud Ayya

96. Who is the present Advocate General of Kerala?
(A) Sri. M.K. Damodharan
(B) Sri. C.P. Sudhakara Prasad
(C) Sri. K.P. Dandapani
(D) Sri. K.K. Venugopal

97. The 7th meeting of SAARC immigration authorities was held in August 2016 :
(A) Islamabad
(B) New Delhi
(C) Katmandu
(D) Colombo

98. The present Speaker of Lok Sabha is :
(A) Miera Kumar
(B) Manohar Joshi
(C) Sreeramakrishnan
(D) Sumitra Mahajan

99. Who was the recipient of Dada Saheb Phalke Award 2015?
(A) Shashi Kapoor
(B) K. Pran
(C) Gulzar
(D) Manoj Kumar

100. The Government of India has cleared the purchase of S-400 Triumf Missile system from which country?
(A) Germany
(B) Italy
(C) France
(D) Russia