1. A driven well is generally constructed by:

(A) Driving a small diameter well point into the ground
(B) Excavating a very large pit
(C) Constructing a dam
(D) Pumping water into the soil
(E) Answer not known

2. Priming of a conventional centrifugal pump means

(A) Increasing pump speed
(B) Filling the pump casing and suction line with liquid
(C) Increasing Impeller diameter
(D) Increasing discharge pressure
(E) Answer not known

3. CRZ shall apply to the distance. Upto which ———————— effects are experienced in water bodies.

(A) Water pollution
(B) Tidal
(C) Aeration
(D) Colouring
(E) Answer not known

4. Every room which is intended for human habitation. Shall be provided with a ventilation area of not less than ———————— of the floor area of the room as per Tamil Nadu District Municipalities Building Rules 1972.

(A) One – Six
(B) One – Seven
(C) One – Eight
(D) One – Nine
(E) Answer not known

5. For the most economical trapezoidal channel, the hydraulic radius [R] is equal to :

(A) depth of flow
(B) half of depth of flow
(C) double the depth of flow
(D) three times the depth of flow
(E) Answer not known

6. The Manning equation is commonly used for the analysis of the problems of flow through channels, in which does not depend on

(A) Roughness co-efficient
(B) Hydraulic radius
(C) Hydraulic grade line
(D) Atmospheric pressure
(E) Answer not known

7. Sudden enlargement of a pipe causes:

(A) No energy loss
(B) Major head loss
(C) Minor head loss
(D) Increase in total head
(E) Answer not known

8. The flow which does not change with time respect to space is

(A) Steady flow
(B) Unsteady flow
(C) Uniform flow
(D) Both (a) and (b)
(E) Answer not known

9. If pore water pressure (u) increases while total normal stress remains constant, the effective stress will:

(A) Increase
(B) Decrease
(C) Remain unchanged
(D) Become zero always
(E) Answer not known

10. A line, plane or volume that, by its continuity and regularity, serves to gather, measure, and organize a pattern of forms and spaces refers to

(A) Transformation
(B) Balance
(C) Rhythm
(D) Datum
(E) Answer not known

11. When an opening is located along the edge of a wall or at the corner of a room, the daylight entering through it will wash the surface of the wall adjacent and ————————.

(A) adjacent to the plane of the opening
(B) offset to the plane of the opening
(C) parallel to the plane of the opening
(D) perpendicular to the plane of the opening
(E) Answer not known

12. Le Corbusier comments on form in his book ————————.

(A) Ten books of Architecture
(B) Introduction to Architecture
(C) Form, Space and order
(D) Five points of Architecture
(E) Answer not known

13. The preparation of development plan includes:

(A) only plan preparation
(B) plan preparation, implementation and public participation
(C) only construction
(D) only land acquisition
(E) Answer not known

14. Which of the following pair is correctly matched?

(A) HUDCO – Individual Housing Loans only
(B) HUDCO – Long term Financing for Housing Agencies
(C) HUDCO – Agricultural Finance
(D) HUDCO – Short term Industrial Finance
(E) Answer not known

15. Chandigarh is a classic example of:

(A) Ancient Town Planning
(B) Modern Town Planning
(C) Medieval Town Planning
(D) Rural Planning
(E) Answer not known

16. As per resettlement and rehabilitation framework, in ———— means act or process of shifting families from their dwelling area to another place by invoking legal eviction process.

(A) Involuntary Resettlement
(B) Voluntary Resettlement
(C) Squatters
(D) Encroachers
(E) Answer not known

17. The Urban Morphological Analysis is a ————————.

(A) process for assessing urban basic problems
(B) study relevant to urban amenities development
(C) framework for conservation planning and management
(D) constructional analysis based on the problems
(E) Answer not known

18. The Tomb of Ghias-ud-din was built in

(A) 1325 AD
(B) 1315 AD
(C) 1313 AD
(D) 1290 AD
(E) Answer not known

19. Jamat Khana Masjid, Delhi was built in the year

(A) 1320 AD
(B) 1232 AD
(C) 1300 AD
(D) 1292 AD
(E) Answer not known

20. Under the slave dynasty the kings who ruled from ———————— to ———————— AD were the most active patrons of the building art, and their productions were of the utmost significance in laying the foundations of the style.

(A) 1102 to 1120 A.D.
(B) 1112 to 1121 A.D.
(C) 1211 to 1236 A.D.
(D) 1200 to 1208 A.D.
(E) Answer not known

21. Why is a green house designed with large glazing area in cold climate?

(A) Reduce solar radiation
(B) To maximize solar energy input
(C) To increase wind circulation
(D) To decrease humidity
(E) Answer not known

22. The composition of the producer gas obtained from biomass gasification mainly depends on:

(A) The color of the biomass used
(B) The size of the gasifier alone
(C) The degree of equilibrium attained among the gasification reactions
(D) The atmospheric pressure only
(E) Answer not known

23. Identify the typical depth range of percolation/recharge bore bit?

(A) 1–3 m
(B) 2–4 m
(C) 4–8 m
(D) 8–12 m
(E) Answer not known

24. Which of the following rooms is classified a Class D – room in Educational Building?

(A) Workshop
(B) Music room
(C) Library
(D) Gymnasium
(E) Answer not known

25. At speed of 60 km/n, which type of railway train generates the lowest noise level at distance of 30 m?

(A) Steam train
(B) Diesel train
(C) Electric train
(D) Metro train
(E) Answer not known

26. Which temperature is measured using a thermometer whose sensing bulb is covered with a wet muslin cloth?

(A) Dew point temperature
(B) Dry bulb temperature
(C) Wet bulb temperature
(D) Saturation temperature
(E) Answer not known

27. If the exact building population is not available in preliminary lift planning, it should be estimated based on the:

(A) Total built up area
(B) Gross floor area
(C) Net usable area
(D) Carpet area excluding walls only
(E) Answer not known

28. Which of the following is NOT a directly controllable environmental parameter of HVAC – System?

(A) Air temperature
(B) Relative humidity
(C) Clothing insulation
(D) Air speed
(E) Answer not known

29. Identify the supports for supply and return air ducts should be designed to:

(A) Reduce air velocity only

(B) Handle load and seismic consideration

(C) Improve duct insulation only

(D) Increase duct pressure

(E) Answer not known

30. For tasks with high brightness (above 100 CD/m^2), the recommended maximum brightness ratio between the visual task and adjacent areas like table top is

(A) 1 : 1 (B) 2 : 1

(C) 6 : 1 (D) 3 : 1

(E) Answer not known

31. A rotary pump consist of

(A) A piston and cylinder

(B) An impeller and diffuser

(C) Two cams rotating in opposite direction

(D) A turbine wheel and guide vanes

(E) Answer not known

32. The total head of pump is equal to

(A) Suction head + Delivery head

(B) Delivery head + Head loss

(C) Suction head + Head loss

(D) Suction head + Delivery head + Head loss

(E) Answer not known

33. Which irrigation method in sewage farming is mainly used for orchards?

(A) Furrow method
(B) Flooding method
(C) Sprinkler method
(D) Basin method
(E) Answer not known

34. Which of the following is a natural method of sewage disposal?

(A) Activated sludge process
(B) Trickling filter
(C) Dilution method
(D) Sedimentation tank
(E) Answer not known

35. In which water supply system is water supplied continuously for 24 hours a day?

(A) Radial system
(B) Intermittent supply system
(C) Continuous supply system
(D) Dead-end system
(E) Answer not known

36. Minimum size of fillet weld specified is ————————?

(A) 3 mm
(B) 2 mm
(C) 1 mm
(D) 0.5 mm
(E) Answer not known

37. Which of the following statements are true about "Fillet weld connections"?

(i) The size of a normal fillet weld shall be taken as the maximum weld leg size

(ii) Size of weld is minimum leg size + 2.4 mm

(iii) For deep penetration welds with penetration not less than 2.4 mm

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

38. The formula for calculating the deflection of a simply supported beam subjected to a uniformly distributed load is ————————?

(A) 5 $WL^4/384$ EI
(B) 5 $WL^4/48$ EI
(C) 5 $WL^4/24$ EI
(D) 5 $WL^4/8$ EI
(E) Answer not known

39. The bending stresses in member subjected to flexure within the elastic range can be determined by using the flexural formula

(A) $M = \sigma_{cbc}.Z$
(B) $M = \sigma_{cbc} / Z$
(C) $M = Z / \sigma_{cbc}$
(D) $M = 1/(\sigma_{cbc}.Z)$
(E) Answer not known

40. A slab is considered a two way slab when the ratio of its longer span to shorter span is,

(A) Greater than 2

(B) Less than or equal to 2

(C) Equal to 3

(D) Greater than 4

(E) Answer not known

41. When the corners of a simply supported two way slab is free to lift, the total area of torsion reinforcement to be provided should be

(A) Equal to the area required for maximum mid span moment

(B) $\frac{1}{2}$ of the area required for maximum mid span moment

(C) $\frac{3}{4}$ of the area required for maximum mid span moment

(D) No torsion reinforcement is required

(E) Answer not known

42. What is the maximum ratio of the unsupported length to the least lateral dimension for a column to be classified as a short column?

(A) 8 (B) 12

(C) 18 (D) 24

(E) Answer not known

43. According to IS 456 : 2000, what is the minimum percentage of longitudinal reinforcement required for a rectangular RCC column is _____.

(A) 0.2%
(B) 0.4%
(C) 0.8%
(D) 0.9%
(E) Answer not known

44. The design shear strength of concrete (τ_c) without any shear reinforcement primary depends on

(A) Grade of steel and total beam depth
(B) Grade of concrete and width of the beam
(C) Grade of concrete and percentage of longitudinal tension reinforcement
(D) Nominal shear stress and concrete clear cover
(E) Answer not known

45. The factor of safety for concrete is compression in bending and in direct compression are _____ respectively, under working stress method.

(A) 3.0 and 4.0
(B) 2.0 and 4.0
(C) 1.5 and 2.5
(D) 1.5 and 4.5
(E) Answer not known

46. In a doubly reinforced concrete beam, the main reinforcement is provided at _____.

(A) Compression zone only

(B) Tension zone only

(C) Both compression and tension zones

(D) Neutral axis

(E) Answer not known

47. In the design of Rectangular beam, partial safety factor applied to steel in bending tension is _____.

(A) 1.5

(B) 1.15

(C) 1.05

(D) 1.2

(E) Answer not known

48. A rectangular column 200 mm wide and 150 mm thickness. It carries a load of 600 kN at an eccentricity of 20 mm in a plane bisecting the thickness. The direct stress of column is _____.

(A) 35 N/mm^2

(B) 15 N/mm^2

(C) 20 N/mm^2

(D) 30 N/mm^2

(E) Answer not known

49. Which of the following statements are true about "bending and direct stress"?

(i) The axial force will cause a direct compressive stress.

(ii) The bending couple will cause compressive stresses only.

(iii) The total stress at any section is given by $f = P/A \pm \frac{P_{ey}}{I_x}$.

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

50. A reservoir with tank full condition, to determine the maximum and minimum stress at the base is determined using the formula

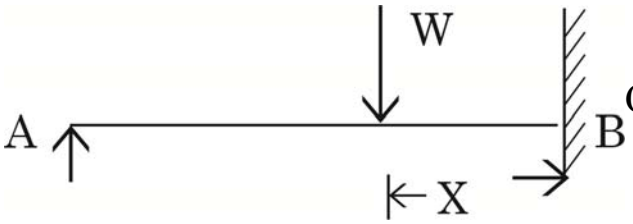
(A) $\frac{W}{B}\left(1 \pm \frac{6e}{B}\right)$
(B) $\frac{W}{L}\left(1 \pm \frac{6e}{B}\right)$
(C) $\frac{W}{L}\left(1 \pm \frac{3e}{B}\right)$
(D) $\frac{W}{B}\left(1 \pm \frac{3e}{B}\right)$
(E) Answer not known

51. Match List I with List II and select the correct answer using the codes given below :

List I		List II	
(a)	Column with both ends hinged	1.	$\pi^2 EI / L^2$
(b)	Column with both ends fixed	2.	$2\pi^2 EI / L^2$
(c)	Column with one end fixed and another end hinged	3.	$4\pi^2 EI / L^2$
(d)	Column with one end fixed another end free	4.	$\pi^2 EI / 4L^2$

	(a)	(b)	(c)	(d)
(A)	1	2	3	4
(B)	3	2	1	4
(C)	1	3	2	4
(D)	2	4	3	1

(E) Answer not known

52. 

Consider the following statement :

1. Bending moment is maximum at B.
2. Bending moment is maximum under load.
3. Deflection is zero at A.
4. Deflection is zero at B.

(A) 1 and 3 are correct
(B) 2 and 4 are correct
(C) 1 and 4 are correct
(D) 1, 3 and 4 are correct
(E) Answer not known

53. The theorem of three moments is also known as

(A) Eulers theorem
(B) Clapeyron's theorem
(C) Castigliano's theorem
(D) Cross Hardy theorem
(E) Answer not known

54. The deflection of the simply supported beam is _____ times the deflection of the fixed beam. When point load act at centre of beam.

(A) 2
(B) 3
(C) 4
(D) 5
(E) Answer not known

55. Fixed beam is also called a _____?

(A) Castellated beam
(B) Cellular beam
(C) Buttress beam
(D) Encastre beam
(E) Answer not known

56. For a tacheometer fitted with an anallatic lens, if the staff is held vertically and angle of elevation is 'θ', the horizontal distance 'D' is

(A) $D = Ks\cos^2\theta + C$
(B) $D = Ks\cos^2\theta$
(C) $D = Ks\cos\theta\sin\theta$
(D) $D = Ks\dfrac{\sin 2\theta}{2} + C$
(E) Answer not known

57. The least count of a Vernier transit theodolite is _____.

(A) $15''$
(B) $20'$
(C) $20''$
(D) $15'$
(E) Answer not known

58. Which of the following factors primarily dictates the choice of a smaller contour interval in a surveying project?

(A) Large extent of the area

(B) Flat Terrain

(C) Steep and rugged terrain

(D) Limited time and funds for the project

(E) Answer not known

59. A level was setup at a point A and the distance to the staff station B was 100 m. The net combined correction due to the curvature and refraction as applied to the staff reading is

(A) 0.00673 m

(B) 6.73 m

(C) 0.000673 m

(D) 0.0673 m

(E) Answer not known

60. From the following, which instrument is not used for taking offset?

(A) Open cross staff

(B) French cross staff

(C) Levelling staff

(D) Optical square

(E) Answer not known

61. When performing the stepping method on a steep slope, it is generally more convenient and accurate to chain?

(A) From the bottom of the slope to the top

(B) From the top of the hill to the toe

(C) Randomly across the contour lines

(D) From lower elevation point to higher elevation point

(E) Answer not known

62. If the tape used in measuring the distance is actually 29.95 m long whereas nominal length is 30 m. The error is classified as

(A) Systematic error
(B) Instrumental error
(C) Accidental error
(D) Natural error
(E) Answer not known

63. If the observed whole circle bearings of line AB and AC were 40° and 290°. The interior angle CAB is equal to

(A) 250°
(B) 330°
(C) 110°
(D) 150°
(E) Answer not known

64. Consider the following statements with respect to compass surveying and identify the correct answer :

Statement A : The direction of a survey line measured using a prismatic compass is called magnetic bearing.

Statement B : The direction of a survey line measured using a surveyor compass is called arbitrary bearing.

(A) Statement A is correct and B is incorrect
(B) Both statements are incorrect
(C) Statement B is correct and A is incorrect
(D) Both statements are correct
(E) Answer not known

65. Which of the following methods is not used to plot a traverse?

(A) By parallel meridians through each stations
(B) By included angles
(C) Bowditch method
(D) By paper protractor
(E) Answer not known

66. Which composite material consist of carbon fibers embedded in graphite matrix?

(A) Ceramic Matrix Composite (CMC)
(B) Reinforced Carbon Composite
(C) Reinforced Carbon-Carbon
(D) Glass Fiber Reinforced Plastic
(E) Answer not known

67. Which of the following smart materials changes its viscosity when exposed to a magnetic field?

(A) Shape memory alloy
(B) Piezoelectric ceramic
(C) Magneto – Rheological (MR) fluid
(D) Optical fiber
(E) Answer not known

68. Which organization developed the Leed Rating system?

(A) IGBC
(B) BEE
(C) USGBC
(D) GBCA
(E) Answer not known

69. According to IS-456, nominal mix concrete is generally permitted up to which grade?

(A) M30
(B) M20
(C) M15
(D) M25
(E) Answer not known

70. Which of the following is not a defect in paints?

(A) Blistering
(B) Chalking
(C) Crocodiling
(D) Foxiness
(E) Answer not known

71. Which process is specifically used to improve the fire resistance of wood by applying sodium silicate and slaked lime?

(A) Boucherie process
(B) Bethell process
(C) Able's process
(D) Full cell process
(E) Answer not known

72. Assertion [A] : Very fine and very coarse sand are unsuitable for good mortar and concrete.

Reason [R] : Fine sand give poor mortar, while coarse sand reduce workability.

(A) Both [A] and [R] true and [R] is the correct explanation of [A]
(B) Both [A] and [R] are true, but [R] is not the correct explanation of [A]
(C) [A] is true, but [R] is false
(D) Both [A] and [R] are false
(E) Answer not known

73. Rapid Hardening Cement (RHC) develops the same strength in one day that Ordinary Portland Cement (OPC) generally develops in :

(A) 1 day
(B) 2 days
(C) 3 days
(D) 7 days
(E) Answer not known

74. Assertion [A] : Third class bricks are suitable for permanent load-bearing structures.

Reason [R] : Third class bricks are under burnt, soft and absorb water about 25% of dry weight.

(A) Both [A] and [R] true and [R] is the correct explanation of [A]
(B) Both [A] and [R] are true, but [R] is not the correct explanation of [A]
(C) [A] is false, but [R] is true
(D) Both [A] and [R] are false
(E) Answer not known

75. Assertion [A] : First class bricks are recommended for exposed face work.

Reason [R] : First class bricks have smooth surfaces, sharp edges, low water absorption and high crushing strength.

(A) Both [A] and [R] true and [R] is the correct explanation of [A]
(B) Both [A] and [R] are true, but [R] is not the correct explanation of [A]
(C) [A] is true, but [R] is false
(D) [A] is false, but [R] is true
(E) Answer not known

76. Which ruler ordered the protection of ancient building in the 14th Century AD?

(A) Sher Shah Suri

(B) Akbar

(C) Firuz Shah Tughlaq

(D) Aurangzeb

(E) Answer not known

77. Which is required for a precast floor to act as a horizontal diaphragm?

(A) Timber reinforcement

(B) Plastic connectors

(C) Steel reinforcement connecting slab units

(D) Water proofing only

(E) Answer not known

78. Assertion [A] : Precast concrete floor units are manufactured in factories rather than a site.

Reason [R] : Factory production provides consistent quality, durability and finish while eliminating the need for on site formwork.

(A) Both [A] and [R] true and [R] is the correct explanation of [A]

(B) Both [A] and [R] are true, but [R] is not the correct explanation of [A]

(C) [A] is true, but [R] is false

(D) [A] is false, but [R] is true

(E) Answer not known

79. In a three coat plaster system, which coat applied first?

(A) Brown coat
(B) Finish coat
(C) Base coat
(D) Scratch coat
(E) Answer not known

80. Assertion [A] : Primers are applied before the finish coat of paint.

Reason [R] : Primers improve the adhesion of subsequent coats of paint or varnish the surface.

(A) Both [A] and [R] true and [R] is the correct explanation of [A]
(B) Both [A] and [R] are true, but [R] is not the correct explanation of [A]
(C) [A] is true, but [R] is false
(D) [A] is false, but [R] is true
(E) Answer not known

81. Assertion [A] : Double glazing provides better thermal Insulation than single glazing.

Reason [R] : Double glazing increases the thermal Resistance (R-value) of a window and Reduce heat transfer.

(A) Both [A] and [R] are true and [R] is the correct Explanation of [A]
(B) Both [A] and [R] are true, but [R] is not the correct Explanation of [A]
(C) [A] is true, But [R] is false
(D) [A] is false, But [R] is true
(E) Answer not known

82. Which of the following roofing material is most suitable for medium and high-slope roofs?

(A) Continuous membrane roofing only

(B) Shingles, tiles, or sheet material

(C) Reinforced concrete slabs only

(D) Waterproof paint only

(E) Answer not known

83. Assertion [A] : Plank-and-beam construction may qualify as heavy timber construction.

Reason [R] : It qualifies when the wood members meet the minimum code-specified sizes and the floor roof structures are supported by non-combustible, fire-resistive exterior walls.

(A) Both [A] and [R] are true, and [R] is the correct Explanation of [A]

(B) Both [A] and [R] are true, but [R] is not the correct Explanation of [A]

(C) [A] is true, But [R] is false

(D) [A] is false, But [R] is true

(E) Answer not known

84. Assertion [A] : Excessive deflection on floor system should be avoided.

Reason [R] : Excessive deflection and vibration can damage floor finishes and ceilings and reduce occupant comfort.

(A) Both [A] and [R] are true and [R] is the correct Explanation of [A]

(B) Both [A] and [R] are true, but [R] is not the correct Explanation of [A]

(C) [A] is true, But [R] is false

(D) [A] is false, But [R] is true

(E) Answer not known

85. Assertion [A] : Spread footings are extended laterally to distribute building load over a large area.

Reason [R] : This ensure that the pressure transmitted to the soil does not exceed its allowable bearing capacity.

(A) Both [A] and [R] are true and [R] is the correct Explanation of [A]

(B) Both [A] and [R] are true, but [R] is not the correct Explanation of [A]

(C) [A] is true, But [R] is false

(D) [A] is false, But [R] is true

(E) Answer not known

86. Staggered Rail joints are mostly preferred

(A) In perfectly straight station yards

(B) On sharp curved tracks to reduce severe lateral centripetal jerks

(C) Inside perfectly dry, air - conditioned tunnels

(D) On high-speed, elevated broad-gauge routes

(E) Answer not known

87. Which of the following statements is correct regarding the primary purpose of conducting the Tup Test on a manufactured rail sample?

1. To determine the chemical percentage of carbon in the steel rail
2. To test the structural toughness of the rail and ensure it does not break under sudden heavy shock loads.
3. To measure the rate of rust formation on the rail head when exposed to rain water.

(A) 1 and 2 only

(B) 2 only

(C) 2 and 3 only

(D) 3 only

(E) Answer not known

88. The standard dimensions (L × B × D) of a conventional wooden sleeper used for a Broad Gauge (BG) track in Indian Railways is

L – Length of Sleeper

B – Width of Sleeper

D – Depth of Sleeper

(A) 2.75 m × 25 cm × 12.5 cm

(B) 1.83 m × 20 cm × 11 cm

(C) 1.52 m × 15 cm × 10 cm

(D) 3.50 m × 30 cm × 15 cm

(E) Answer not known

89. If the width of a sleeper is 'w' and the center to center spacing between two adjacent sleepers is 'S', the minimum depth of the ballast section (D) is

(A) $D=\frac{S+w}{2}$ (B) $D=\frac{S-w}{2}$

(C) $D=\frac{S\times w}{2}$ (D) $D=S-w$

(E) Answer not known

90. According to Indian Railway practice, the standard manufactured length of a single rail piece for Broad Gauge (BG) track is

(A) 10.00 m (B) 11.89 m

(C) 12.80 m (D) 15.09 m

(E) Answer not known

91. The track capacity of a railway track is

(A) The maximum load-carrying capacity of the steel rails

(B) The maximum number of trains that can run safely on a track in a hour

(C) The maximum speed a passenger train can achieve on a straight section

(D) The total length of the passenger platform at a junction station

(E) Answer not known

92. As per TNCDBR 2019 the planning parameter for non high rise buildings should not exceed _____ in height.

(A) 22 m (B) 26 m

(C) 18.3 m (D) 20.5 m

(E) Answer not known

93. Sir Patrick Geddes prepared the town improvement scheme of _____.

(A) Chennai (B) Madurai

(C) Trichy (D) Salem

(E) Answer not known

94. The measure of number of persons per habitable room is referred to as :

(A) Dwelling Rate (B) Occupancy Rate

(C) Accommodation Rate (D) Crowding Rate

(E) Answer not known

95. The first man to introduce sociological concept in town planning is

(A) Sir. Patrick Geddes

(B) Sir. Ebenezer Howard

(C) Clarence Stein

(D) C.A. Perry

(E) Answer not known

96. Name the planned, Capital City which was located along the Western Banks of River Sabarmati?

(A) Gandhi Nagar (B) Ahmadabad

(C) Jaipur (D) Rajkot

(E) Answer not known

97. According to the regional planning approach adopted in India as per URDPFI, guidelines the planning regions can be classified as

(i) Administrative region

(ii) Investment region

(iii) Special region

(iv) Metropolitan Area

(A) (i), (ii), (iii) & (iv) (B) (i) & (iv)

(C) (ii), (iii) & (iv) (D) (i), (ii) & (iii)

(E) Answer not known

98. Arrange the following steps involved in the process of regional planning in order.

1. Determining the need of a region
2. Making plan of region
3. Demarcating the region
4. Identifying the region
5. Implementing plan
6. Review of the plan.

(A) 3, 4, 1, 2, 5, 6
(B) 3, 4, 1, 2, 6, 5
(C) 4, 3, 1, 2, 5, 6
(D) 4, 3, 1, 2, 6, 5
(E) Answer not known

99. For residential buildings if the width of the street fronting the plots is above 30 m, the minimum front open space required as per NBC is _____.

(A) 6 m
(B) 7 m
(C) 5 m
(D) 4 m
(E) Answer not known

100. GIFT city stands for

(A) Gujarat Innovative Financial Tec. City
(B) Gujarat International Finance Tec. City
(C) Gandhinagar International Financial Tec. City
(D) Gandhinagar Innovative Financial Tech. City
(E) Answer not known

101. Growth of the town can be controlled by providing

(A) Ring roads around the town

(B) Green belts around the town

(C) Industries around the town

(D) Fence wall around the town

(E) Answer not known

102. In case of Metro Rail Corridors, as per TNCDBR, 2019 norms, existing and proposed properties located within a distance of 500 m measured from the centre line of the corridors, premium FSI shall be charged at _____ of the normal premium FSI rate.

(A) 25% (B) 10%

(C) 50% (D) 75%

(E) Answer not known

103. Identify the minimum stages of inspection for recording progress, checking and issuing continuance certificate for non-high rise buildings above 12.0 meter in height as per TNCDBR, 2019.

(i) Plinth

(ii) Last Storey

(iii) First floor concreting

(iv) Second floor concreting

(A) (i) & (ii) (B) (i), (ii) & (iii)

(C) (i), (iii) & (iv) (D) (i) & (iv)

(E) Answer not known

104. Space between successive trees is decided by considering _____.

(A) Human Being
(B) Climatic condition
(C) Animals
(D) Birds
(E) Answer not known

105. _____ is called as the collective leaves of a plant or plants in landscape architecture.

(A) Foliage
(B) Canopy
(C) Hedge
(D) Robustar
(E) Answer not known

106. The minimum area required for designing a Neighbourhood park in hilly area which will serve around 10,000 people is _____.

(A) 0.5 to 1.0 Ha
(B) 1.0 to 1.2 Ha
(C) 1.2 to 2.0 Ha
(D) 2.0 to 2.5 Ha
(E) Answer not known

107. The term "FSI" means

(A) Fixed Special Index
(B) Fixed Space Index
(C) Floor Space Index
(D) Floating Space Index
(E) Answer not known

108. Building not exceeding 18.30 m in height (Non High rise buildings); permissible FSI is _____ as per TNCDBR 2019.

(A) 1.5
(B) 2.0
(C) 2.5
(D) 3.0
(E) Answer not known

109. Park's which provide fresh air and peaceful enjoyment of the unspoiled nature comes under which type of Recreation?

(A) Passive
(B) Active
(C) Active & Passive
(D) Play ground
(E) Answer not known

110. In Landscape architecture _____ vegetation loses its leaves in autumn and regains in spring.

(A) Deciduous
(B) Coniferous
(C) Tropical
(D) Evergreen
(E) Answer not known

111. In transport planning trumpet interchange is a popular form of _____.

(A) Three leg interchange
(B) Two leg interchange
(C) Four leg interchange
(D) Rotary
(E) Answer not known

112. Separation of road's by taking one over or under another is known as

(A) Bridge
(B) Elevated corridor
(C) Grade separation
(D) Green Belt
(E) Answer not known

113. Diagonal and chevron markings enhance road safety by _____.

(A) Reducing vehicle speed
(B) Providing a visual guide to keep vehicles in their lanes
(C) Indicating speed limits
(D) Marking pedestrian paths
(E) Answer not known

114. _____ used for access functions to adjoining properties and areas.

(A) Local street
(B) Collector roads
(C) Sub-Arterial road
(D) Access street
(E) Answer not known

115. As per URDPFI guidelines, the urban roads in India is categorized as follows :

(i) Urban expressway
(ii) Arterial road
(iii) Sub - Arterial Road
(iv) Distributor / Collector Road
(v) Local street
(vi) Access street

(A) (i), (ii), (iii), (iv), (v) & (vi)
(B) (ii), (iii), (iv) & (v)
(C) (i) & (vi)
(D) (i), (ii), (iii), (iv) & (v)
(E) Answer not known

116. Find the two factors are usually the largest sources of geometric distortion in aerial mapping images?

(A) Atmospheric bending and film deformation

(B) Camera lens defects and sensor error

(C) Terrain variation and camera tilt

(D) Weather conditions and aircraft speed

(E) Answer not known

117. Identify the range of the electromagnetic spectrum is visible to human eye?

(A) 0.1 – 0.3 μ.m.

(B) 0.4 – 0.7 μ.m.

(C) 0.7 – 1.1 μ.m.

(D) 1.1 – 2.5 μ.m.

(E) Answer not known

118. Which supporting materials help improve the accuracy of satellite image interpretation?

(A) Published maps, departmental reports, and field observation

(B) Television broadcasts only

(C) Social media post only

(D) Weather forecast only

(E) Answer not known

119. Which point an aerial photograph is defined as the point where a plumb line from the front nodal point pierces the photograph?

(A) Exposure station

(B) ISO centre

(C) Nadir point

(D) Ground principal point

(E) Answer not known

120. Which of the following is an applications of GIS in the transport Industry?

(A) Soil fertility analysis

(B) Route selection for goods delivery and vehicle tracking

(C) Hospital Patient management

(D) Forest Density Analysis

(E) Answer not known

121. In Revit Architecture which of the following can be used to change the height of level in an elevation view?

(A) Project Browser

(B) Type selector only

(C) Checking the dimension value associated with the level

(D) View cube

(E) Answer not known

122. In Autocad how can user choose a material definition other than the default standard material?

(A) Double click the drawing area

(B) Right click the material tool and select properties

(C) Press the UCS icon

(D) Click layer setting dialog box

(E) Answer not known

123. Which file format is used to store exported property set data in Autocad?

(A) .DWG

(B) .DXF

(C) .MDB

(D) .DWF

(E) Answer not known

124. Which Autocad command is used to quickly copy properties such as layer, color and line type from one object to another?

(A) COPY
(B) MIRROR
(C) MATCH PROP
(D) OFFSET
(E) Answer not known

125. Which authority mentors the disaster management structure in India?

(A) IMD
(B) NDMA
(C) DRDO
(D) ISRO
(E) Answer not known

126. The Crisis Management Plan (CMP) of the ministry of home affairs was first formulated in :

(A) 2003
(B) 2004
(C) 2008
(D) 2009
(E) Answer not known

127. Who functions as the nodal officer for coordinating relief operations for all natural disaster at the centre?

(A) Cabinet Secretary
(B) Chief Secretary
(C) District Collector
(D) Central Relief Commissioner
(E) Answer not known

128. Which of the following is an example of natural disaster?

(A) Nuclear accident
(B) Terrorist attack
(C) Industrial explosion
(D) Earthquake
(E) Answer not known

129. Historically, the construction industry has been criticized mainly for:

(A) Lack of skilled workers
(B) High material costs
(C) Poor project planning
(D) A serious shortfall in ethical standards
(E) Answer not known

130. Under the factories act, 1948, what is the normal maximum working time in a week?

(A) 40 hours
(B) 44 hours
(C) 48 hours
(D) 50 hours
(E) Answer not known

131. Which organization is having complied a list of fire prevention features for construction sites?

(A) World Health Organization (WHO)
(B) National Safety Council
(C) International Labour Organization
(D) Munich Reinsurance Company
(E) Answer not known

132. Which of the following is the responsibility of an employer in safety management?

(A) Manufacturing safe construction equipment

(B) Inspecting building after completion only

(C) Providing proper supervision and ensuring machinery complies with safety regulations

(D) Cleaning windows of tall building

(E) Answer not known

133. Which of the following is considered a physical resource in project costing?

(A) Project schedule

(B) Manpower, equipment and material

(C) Contract agreement

(D) Project report

(E) Answer not known

134. Which document is used by contractors to determine quantities and estimates the cost of work items?

(A) Site Diary

(B) Bill of Quantities (BOQ)

(C) Material Register

(D) Cash Book

(E) Answer not known

135. Why are events sometimes numbered in an even-digit sequence (0, 2, 4 …)?

(A) Reduce project duration

(B) Simplify cost estimation

(C) Allow insertion of additional events later without renumbering all events

(D) Identify critical activities only

(E) Answer not known

136. Which of the following network analysis techniques is most commonly used for time planning in construction projects?

(A) GERT

(B) PNA

(C) MCS

(D) Milestone chart

(E) Answer not known

137. Arranging chronological order/event type:

Arrange the following correctly represents the sequences of construction project development phases:

1. Execution
2. Planning and procurement
3. Commissioning
4. Concept Analysis

(A) 4, 2, 1, 3

(B) 2, 1, 4, 3

(C) 1, 3, 4, 2

(D) 1, 2, 3, 4

(E) Answer not known

138. Which of the following is not a tool used in project planning and programming?

(A) Bar chart
(B) Milestone chart
(C) Network Diagrams
(D) Soil classification charts
(E) Answer not known

139. Which of the following document is NOT typically produced during the construction procurement phase?

(A) Bill of Quantities
(B) Detailed drawings
(C) Equipment warranties
(D) Specifications
(E) Answer not known

140. Assertion [A] : Every project has a well-defined beginning and end because it's a temporary endeavour.

Reason [R] : Projects are created to accomplish specific objectives within constrains such as time, cost, resources and quality.

(A) Both [A] and [R] are true, and [R] is the correct explanation of [A]
(B) Both [A] and [R] are true, but [R] is not the correct explanation of [A]
(C) [A] is true, but [R] is false
(D) [A] is false, but [R] is true
(E) Answer not known

141. Specification mentioning the nature and class of work and materials to be used from foundation to the superstructure along with the rough cost and detailed estimates is called

(A) Detailed specification
(B) General specification
(C) Structural Drawing
(D) Tender Schedule
(E) Answer not known

142. A report prepared for a proposed construction project should generally contain:

(A) Project description
(B) Estimated cost
(C) Technical details
(D) All of the above
(E) Answer not known

143. The conclusion of a report generally contains :

(A) A summary of main findings
(B) New unrelated information
(C) Only the site
(D) Raw drawings
(E) Answer not known

144. The main purpose of an estimate is to determine to the:

(A) Exact quantity of every material
(B) Approximate cost of a proposed work
(C) Final payment to the contractor
(D) Actual cost after completion
(E) Answer not known

145. The two main parts considered in the approximate quantity method are :

(A) Foundation and roof
(B) Plinth and roof
(C) Foundation including plinth and superstructure
(D) Substructure and roof only
(E) Answer not known

146. A reliable plinth area rate should preferably be based on building having similar

(A) Color, Furniture and age
(B) Specification, height and construction
(C) Number of rooms only
(D) Foundation depth only
(E) Answer not known

147. The final total cost obtained after adding the applicable provisions is called the :

(A) Basic cost
(B) Grand total
(C) Unit rate
(D) Net quantity
(E) Answer not known

148. Rates for different items of work may be taken from the

(A) Schedule of rates
(B) Site plan
(C) Drawing sheet
(D) Measurement book
(E) Answer not known

149. Property value may be influenced by supply on demand because:

(A) Market conditions affect property value
(B) Building dimensions never affect value
(C) Construction materials become free
(D) Rent becomes independent of demand
(E) Answer not known

150. Match Column I with Column II :

	Column I		Column II
(a)	Scrap value	1.	Value of dismantled materials
(b)	Salvage value	2.	Value without dismantling
(c)	Market value	3.	Value is open market
(d)	Book value	4.	Value after depreciation

	(a)	(b)	(c)	(d)
(A)	1	2	3	4
(B)	2	1	4	3
(C)	3	4	1	2
(D)	4	3	2	1

(E) Answer not known

151. As per IS 1200 (Part 3), thin partition walls (such as half brick walls) are measured in

(A) Cubic meters
(B) Running meters
(C) Numbers
(D) Square meters
(E) Answer not known

152. The areas which are not included while calculating the plinth area of the building?

(A) Internal shafts for sanitary installations

(B) Courtyards, open areas

(C) All floors, area of walls

(D) Area of porches other than cantilevered

(E) Answer not known

153. Type of estimate mandatory for submission to secure a technical sanction is

(A) Preliminary Cost Estimate (B) Plinth Area Estimate

(C) Cube Rate Estimate (D) Detailed Estimate

(E) Answer not known

154. If a flight of 10 steps has a tread of 0.25 m, a rise of 0.15 m and clear width of 1.2 m, what is the total horizontal plan area covered by these steps?

(A) 3.00 m^2 (B) 1.80 m^2

(C) 3.60 m^2 (D) 1.50 m^2

(E) Answer not known

155. If the total center line length of all walls in a building is 60 m, the breadth of the wall is 0.4 m, and height of brickwork is 3.0 m, the total volume of brick masonry is

(A) 36 m^3 (B) 72 m^3

(C) 180 m^3 (D) 50 m^3

(E) Answer not known

156. In long wall, short wall method, the length of the long wall is generally calculated as

(A) Center to center length only

(B) Center to center length minus two times the breadth

(C) Center to center length plus two times half the breadth

(D) Center to center length minus two times half the breadth

(E) Answer not known

157. Woodwork for door and Window frames is measured in

(A) sq.m.

(B) cu.m

(C) m

(D) numbers (no.s)

(E) Answer not known

158. In the first stage of a detailed estimate, the dimensions for each item are computed from

(A) Market survey data

(B) Rough site estimate

(C) Contractor verbal quotations

(D) Approved engineering drawings & plans

(E) Answer not known

159. The approximate estimate is prepared for a construction project

(A) During the final stages of building the roof

(B) When purchasing final decorative items

(C) During the initial planning and feasibility stage for budgeting

(D) When paying the final bill to the contractor

(E) Answer not known

160. The Plinth area estimate is calculated by

(A) Multiplying total length of all walls by width of the walls
(B) Total built-up volume of the building multiplied by unit rate
(C) Multiplying the plinth area of the building by plinth area rate
(D) Detailed measurement of all individual items of work
(E) Answer not known

161. The zone on Earth, where alone life exists, is called :

(A) Hydrosphere
(B) Lithosphere
(C) Biosphere
(D) Troposphere
(E) Answer not known

162. MoEF stands for

(A) Ministry of Environmental Finance
(B) Ministry of Energy and Forest
(C) Ministry of Environment and Forest
(D) Ministry of Ecology and Fisheries
(E) Answer not known

163. The ozone layer thickness is measured in

(A) Dobson Units (DU)
(B) Decibels (dB)
(C) Becquerel (Bq)
(D) Weber (Wb)
(E) Answer not known

164. The average consumption of air by an adult human being is of the order of :

(A) 5 kg
(B) 12 kg
(C) 25 kg
(D) 30 kg
(E) Answer not known

165. Acceptable noise level for residential and business urban areas as per IS : 4954 – 1968 is

(A) 20 – 25 dB
(B) 40 – 50 dB
(C) 50 – 60 dB
(D) 70 – 80 dB
(E) Answer not known

166. For proper development of Anaerobic digestion, C/N ratio of the digestive material should be between _____.

(A) 30 to 50
(B) 50 to 60
(C) 60 to 70
(D) 70 to 80
(E) Answer not known

167. What does the term 'VEC's stand for in EIA terminology?

(A) Various Engineering Costs
(B) Verified Ecological Controls
(C) Vulnerable Ecosystem Categories
(D) Valued Environmental Concepts
(E) Answer not known

168. Manholes are generally located

(A) at all changes of direction of sewer
(B) at all changes of gradient of sewer
(C) at junctions of different sewer
(D) all of the above
(E) Answer not known

169. Minimum D.O. prescribed for a river stream, to avoid fish kills, is

(A) 2 ppm
(B) 4 ppm
(C) 8 ppm
(D) 10 ppm
(E) Answer not known

170. The anaerobic method of mechanical composting, as practised in India, is called :

(A) Indore method
(B) Mangalore method
(C) Composting
(D) Purification
(E) Answer not known

171. For disposal of sewage by separate system, the cross-section of sewer most suitable is

(A) Rectangular
(B) Circular
(C) Egg-shaped
(D) Horse-shoe shaped
(E) Answer not known

172. In tricking filter, the B.O.D. is reduced to

(A) 35% to 45%
(B) 45% to 75%
(C) 75% to 85%
(D) 85% to 95%
(E) Answer not known

173. A pipe which is installed in house drainage to preserve the water seal of trap, is called

(A) Vent pipe
(B) Soil pipe
(C) Anti siphonage pipe
(D) Waste pipe
(E) Answer not known

174. The suitable layout for a water supply distribution system, for an irregularly grown town is :

(A) Dead End System
(B) Grid Iron System
(C) Ring System
(D) Radial System
(E) Answer not known

175. The method, which is most widely used for analysing and designing the pipes of all types of complex water distribution network is

(A) Equivalent pipe method
(B) Hardy cross method
(C) Circle method
(D) All of the above
(E) Answer not known

176. The settling velocity of inorganic particles in a sedimentation tank of a water treatment plant, is governed by _____?

(A) d^3

(B) d^2

(C) d

(D) None of them, as dia does not affect the settling velocity

(E) Answer not known

177. Water hammer pressure can be reduced by using

(A) Fast closing valve

(B) Slow closing valve

(C) Critically closing time, valves

(D) None of these

(E) Answer not known

178. When fluoride concentration in water exceeds 1.5 mg/l or so, the disease that may be caused is _____?

(A) Methemoglobinemia

(B) Fluorosis

(C) Dental caries in children

(D) Poliomyelitis

(E) Answer not known

179. The true colour of water is measured on _____.

(A) Platinum cobalt scale

(B) Silica scale

(C) Nickel scale

(D) All the above

(E) Answer not known

180. Which source of water, among the following is not a sub surface water source?

(A) Spring
(B) Well
(C) Storage reservoir
(D) Infiltration gallery
(E) Answer not known

181. The torsion equation for a circular shaft is?

(A) $\frac{\tau}{R} = \frac{CO}{L}$
(B) $P = N/t$
(C) $\sigma = P/A$
(D) $M = EI$
(E) Answer not known

182. Torsional rigidity of shaft is equal to _____?

(A) Product of modulus of rigidity and polar moment of Inertia
(B) Sum of modulus of rigidity and polar moment of Inertia
(C) Difference of modulus of rigidity and polar moment of Inertia
(D) Ratio of modulus of rigidity and polar moment of Inertia
(E) Answer not known

183. Which of the following is not a factor affecting the angle of twist of a shaft?

(A) Torque
(B) Length
(C) Modulus of rigidity
(D) Young's modulus alone
(E) Answer not known

184. For a perfect plane pin-jointed frame, the relationship between members m and joints j is _____?

(A) m = 2j
(B) m = j – 1
(C) m = 3j – 2
(D) m = 2j – 3
(E) Answer not known

185. The twisting of a shaft due to an applied torque is known _____?

(A) Bending
(B) Torsion
(C) Shear
(D) Buckling
(E) Answer not known

186. A symmetrical truss carries a 20 kN load at its centre. Find the reaction at each support.

(A) 5 kN
(B) 10 kN
(C) 15 kN
(D) 20 kN
(E) Answer not known

187. Moment of resistance offered by the section is calculated by _____?

Where,

σ_{max} = maximum bending stress

I = Moment of inertia

Z = Section modulus

(A) $M = (\sigma_{max})^2 \times I$
(B) $M = \sigma_{max} \times Z$
(C) $M = \sigma_{max} \times I^2$
(D) $M = \sigma_{max} \times Z^2$
(E) Answer not known

188. Mention the shape that has the centre of point equal with respect to X-axis and Y-axis.

(A) Rectangle
(B) Triangle
(C) Circle
(D) Semi circle
(E) Answer not known

189. The positions of centroid $(\bar{x}, \bar{y})$ for a quadrant arc of radius 'r' are

(A) $(r, 0.424\,r)$
(B) $(0.424r, r)$
(C) $(0.424r, 0.424r)$
(D) (r, r)
(E) Answer not known

190. A beam of rectangular section of breadth 100 mm and depth 200 mm is subjected to a bending moment of 20 kN-m. Stress developed at a distance of 100 mm from top face is

(A) 30 MPa
(B) 15 MPa
(C) 0 MPa
(D) 7.5 MPa
(E) Answer not known

191. The bending equation is written as _____

Where

$M \rightarrow$ Bending moment

$I \rightarrow$ Moment of Inertia

$\sigma \rightarrow$ Bending stress

$y \rightarrow$ Distance from neutral axis to extreme fibre

$E \rightarrow$ Young's modulus

$R \rightarrow$ Radius of curvature

(A) $\frac{I}{M} = \frac{\sigma}{y} = \frac{E}{R}$

(B) $\frac{M}{I} = \frac{\sigma^2}{y} = \frac{E^2}{R^2}$

(C) $\frac{M}{I} = \frac{\sigma}{y} = \frac{E}{R}$

(D) $\frac{M^2}{I} = \frac{\sigma^2}{y} = \frac{E^2}{R}$

(E) Answer not known

192. Match the following :

(a)	Cantilever beam with point load at free end	1.	$\frac{Pl}{4}$
(b)	Cantilever beam with udl throughout the span	2.	$\frac{Wl^2}{8}$
(c)	Simply supported beam with center point load	3.	Pl
(d)	Simply supported beam with udl throughout the span	4.	$\frac{Wl^2}{2}$

	(a)	(b)	(c)	(d)
(A)	4	3	1	2
(B)	4	2	3	1
(C)	3	4	2	1
(D)	3	4	1	2

(E) Answer not known

193. A cantilever beam of length 4 m carries a UDL of 2 KN/m over its entire length. The maximum bending moment at the fixed end is?

(A) 8 KN-m
(B) 12 KN-m
(C) 16 KN-m
(D) 30 KN-m
(E) Answer not known

194. In which of the following beam, the supports are not placed/positioned at the ends?

(A) Overhanging beam
(B) Simply supported beam
(C) Cantilever beam
(D) Fixed beam
(E) Answer not known

195. The inclined point load acting on the beam indices _____ in the beam.

(A) Only shear force
(B) Only bending moment
(C) Both bending moment and shear force
(D) Bending moment, shear force and axial thrust
(E) Answer not known

196. The variation of shear force and bending moment diagram in a cantilever beam with uniformly distributed load throughout the beam are _____ and _____ respectively.

(A) Parabolic and linear
(B) Cubic and linear
(C) Linear and cubic
(D) Linear and parabolic
(E) Answer not known

197. The ratio of direct stress to the corresponding volumetric strain is called as _____?

(A) Young's modulus
(B) Modulus of rigidity
(C) Poisson's ratio
(D) Bulk modulus
(E) Answer not known

198. If $E = 200$ GPa and $\gamma = 0.25$, the shear modulus is _____.

(A) 60 GPa
(B) 70 GPa
(C) 80 GPa
(D) 100 GPa
(E) Answer not known

199. A force of 1000 N acts on an area of 100 mm^2. What is the stress?

(A) 5 N/mm^2
(B) 10 N/mm^2
(C) 50 N/mm^2
(D) 100 N/mm^2
(E) Answer not known

200. The relation between modulus of elasticity (E) and modulus of rigidity (C) is given by where, $\frac{1}{m}$ = Poisson's Ratio.

(A) $E = C\left(1 + \frac{1}{m}\right)$

(B) $E = 2C\left(1 + \frac{1}{m}\right)$

(C) $E = C\left(1 + \frac{2}{m}\right)$

(D) $E = 2C\left(1 + \frac{2}{m}\right)$

(E) Answer not known