

187/2015

1. The standard dimension of brick as per Indian standard is :  
(A)  $20 \times 10 \times 10$  cm (B)  $22.5 \times 11.5 \times 8$  cm  
(C)  $19 \times 9 \times 9$  cm (D)  $18 \times 9.5 \times 9.5$  cm
2. The aggregate is fine if it is completely retained on :  
(A) 0.15 mm sieve (B) 0.30 mm sieve (C) 4.75 mm sieve (D) 1.18 mm sieve
3. One arc is :  
(A)  $1 \text{ m}^2$  (B)  $100 \text{ m}^2$  (C)  $1000 \text{ m}^2$  (D)  $10 \text{ m}^2$
4. The WCB of a line OA is  $132^\circ$  its quadrantal bearing is :  
(A) S  $48^\circ$ E (B) S  $48^\circ$ W (C) N  $312^\circ$ W (D) E  $48^\circ$ S
5. Checy's formula is given as :  
(A)  $v = i\sqrt{mc}$  (B)  $v = c\sqrt{mi}$  (C)  $v = m\sqrt{ci}$  (D)  $v = mc\sqrt{i}$
6. The algebraic sum of the moments taken about any point in the plane of forces is zero is known as :  
(A) Law of polygon of forces (B) Lamis theorem  
(C) Newton's law of force (D) Laws of moments
7. The resultant hydrostatic force acts through a points is known as :  
(A) centre of gravity (B) centre of buoyancy  
(C) centre of pressure (D) centroid
8. The centre of gravity of quadrant of circle is at a distance of :  
(A)  $\frac{3r}{4\pi}$  from the axis (B)  $\frac{4r}{3\pi}$  from the axis  
(C)  $\frac{3r}{8\pi}$  from the axis (D)  $\frac{8r}{3\pi}$  from the axis

9. If the Poisson's ratio of a material is 0.25, the ratio of modulus of rigidity to the Young's modulus is :  
 (A) 2 (B) 4 (C) 2.5 (D) 0.4
10. The point of contraflexure is the point where :  
 (A) Shear force is zero (B) The bending moment is zero  
 (C) Beam is supported (D) The bending changes its sign
11. Any trap should have :  
 (A) water seal (B) sullage (C) a bend (D) grating
12. Eco system is :  
 (A) habitat (B) community and environment  
 (C) community (D) biosphere and habitat
13. The outer signal is provided at a minimum distance of :  
 (A) 1 km from home signal (B) 580 m from home signal  
 (C) 860 m from home signal (D) 180 m from home signal
14. A thin cylinder of diameter 100 mm and thickness 5 mm is subjected to a internal fluid pressure of  $10 \text{ N/mm}^2$ . The hoop stress is :  
 (A)  $150 \text{ N/mm}^2$  (B)  $10 \text{ N/mm}^2$  (C)  $15 \text{ N/mm}^2$  (D)  $100 \text{ N/mm}^2$
15. In a theodolite traversing the angular error should not exceed using a  $20''$  least count theodolite and 'n' number of sides :  
 (A)  $20''\sqrt{n}$  (B)  $20'' \times n^2$  (C)  $20'' \times \sqrt{n^2}$  (D)  $20'' \times 2n$
16. A horizontal force 40 kgf is applied on a body of weight 120 kg placed in a horizontal plane. If the body is just in the point of motion, the angle of friction be :  
 (A)  $20^\circ$  (B)  $18^\circ 26'$  (C)  $10^\circ$  (D)  $25^\circ$
17. An equation for a deficient frame :  
 (A)  $n = 2j + 3$  (B)  $n = 2j - 3$  (C)  $n = j + 3$  (D)  $n = j - 3$

18. The process of applying cement mortar under pressure through a nozzle is called :  
 (A) Pressurising (B) Prestressing (C) Guniting (D) Compressing
19. A example of endogenous tree is :  
 (A) bamboo (B) teak (C) deodar (D) oak
20. The purpose of soundness list is to determine :  
 (A) the presence of free lime (B) setting time  
 (C) sound proof quality of cement (D) the fineness
21. The maximum permissible excentricity of load on a rectangular foundation with width B is equal to :  
 (A)  $\frac{B}{3}$  (B)  $\frac{B}{6}$  (C)  $\frac{B}{2}$  (D)  $\frac{B}{4}$
22. The portion of the brick obtained by cutting into two portion longitudinally is called :  
 (A) bat (B) king closer (C) queen closer (D) bevelled closer
23. The inner curve of an arch is :  
 (A) spandril (B) extrados (C) soffit (D) arcade
24. Lift become essential in a building when the number of floors exceeds :  
 (A) 2 (B) 3 (C) 4 (D) 6
25. The moment of inertia of a rectangular section having b - width and d - depth about x - axis is given by :  
 (A)  $\frac{bd^3}{12}$  (B)  $\frac{b^3d}{12}$  (C)  $\frac{b^2d^2}{6}$  (D)  $\frac{bd^3}{6}$
26. The ratio of volume of voids to the total volume of given soil is :  
 (A) voids ratio (B) porosity (C) air volume (D) air area

27. A pull of 20 t is suddenly applied to a rod of cross-sectional area  $40 \text{ cm}^2$ . The stress produced in the rod is equal to :
- (A)  $0.5 \text{ t/cm}^2$       (B)  $1.0 \text{ t/cm}^2$       (C)  $2.0 \text{ t/cm}^2$       (D)  $4 \text{ t/cm}^2$
28. In a fixed beam, the slopes at the ends are :
- (A) minimum      (B) maximum  
(C) same as at centre      (D) zero
29. A desirable pH value for water is :
- (A) 7      (B) 6 to 8      (C) 5 to 9      (D) 7 to 8.5
30. The magnetic bearing of a line AB is  $212^\circ 30'$  and the declination  $2^\circ 15'$  east. What is true bearing of the line ?
- (A)  $210^\circ 15'$       (B)  $214^\circ 45'$       (C)  $210^\circ 45'$       (D)  $132^\circ 30'$
31. The process of proper and accurate measurement of concrete ingredients for uniformity of proportion is known as :
- (A) batching      (B) grading      (C) mixing      (D) blending
32. The distance to the neutral axis from the top compression fibre of a singly reinforced rectangular beam is :
- (A)  $x_u = \frac{0.36 f_{ck} b}{0.87 f_y A_{st}}$       (B)  $x_u = \frac{0.3 f_y b}{0.87 f_{ck} A_{st}}$   
(C)  $x_u = \frac{0.87 f_y A_{st}}{0.36 f_{ck} b}$       (D)  $x_u = \frac{0.87 f_{ck} b}{0.36 f_y A_{st}}$
33. The bearing stiffeners in plate girders are provided at :
- (A) mid span      (B) quarter points      (C) supports      (D) equal intervals
34. The most economical section for a column is :
- (A) square      (B) circular      (C) channel      (D) tubular

35. Bearing of OA =  $20^{\circ}30'$  and bearing of OB =  $120^{\circ}00'$ ,  $\angle AOB$  is :  
 (A)  $99^{\circ}30'$  (B)  $100^{\circ}30'$  (C)  $140^{\circ}30'$  (D)  $280^{\circ}00'$
36. The value of dismantled material less the cost of dismantling is called :  
 (A) Scrap value (B) Salvage value (C) Book value (D) Marhit value
37. Back washing is highly effective in case of :  
 (A) Slow sand filters (B) Rapid sand filters  
 (C) Pressure filters (D) Rapid and slow sand filters
38. Colour of fresh sewage :  
 (A) brown (B) gray (C) pink (D) black
39. If 'W' is the weight per volume, 'P' safe bearing capacity and  $\phi$  is the angle of repose of soil retained by the retaining wall. The minimum depth of foundation is :  
 (A)  $\frac{P}{W} \left( \frac{1 - \sin \phi}{1 + \sin \phi} \right)^2$  (B)  $\frac{P}{W} \left( \frac{1 + \sin \phi}{1 - \sin \phi} \right)^2$   
 (C)  $\frac{P}{W} \left( \frac{1 - \sin \phi}{1 + \sin \phi} \right)$  (D)  $\frac{P}{W} \left( \frac{1 + \sin \phi}{1 + \sin \phi} \right)$
40. The bending moment in a beam will be maximum where :  
 (A) the shear force is uniform (B) the shear force is maximum  
 (C) the shear force is zero (D) the shear force is minimum
41. A steel wire of 5 mm diameter is bend into a circular shape of 5 m radius. Young's modulus  $E = 200$  GPa. The maximum stress induced in the wire is :  
 (A)  $100 \text{ N/mm}^2$  (B)  $1000 \text{ N/mm}^2$  (C)  $10 \text{ N/mm}^2$  (D)  $1 \text{ N/mm}^2$
42. A unit is working in anaerobic action is :  
 (A) Activated sludge process (B) Tricling filter  
 (C) Contact bed (D) Septic tank

43. The primary function of steeper is :
- (A) to maintain guage (B) to take loads from rails  
 (C) to give cushioning action (D) to give stability of the train
44. ABCD is a square. The bearing of AB is  $50^\circ$ . The bearing of DC is :
- (A)  $140^\circ$  (B)  $190^\circ$  (C)  $50^\circ$  (D)  $290^\circ$
45. The sum of interior angles of a closed traverse is :
- (A)  $(2n - 4)90$  (B)  $(2n + 4)90$  (C)  $(2n - 4)180$  (D)  $(2n + 4)180$
46. Current meter is used for measuring :
- (A) Velocity (B) Viscosity (C) Current (D) Pressure
47. The quantity of cement required for the ratio of 1 : 5 in cement mortar is :
- (A) 288 kg (B) 240 kg (C) 178 kg (D) 206 kg
48. In a problem the algebraic sum of all horizontal ( $\Sigma H$ ) is 16 N and the algebraic sum of all vertical force ( $\Sigma V$ ) is 32 N. The resultant force is :
- (A) 48.5 N (B) 35.8 N (C) 38.5 N (D) 40 N
49. The process of adding water to lime and convert it into hydrated lime is called :
- (A) watering (B) baking (C) hydration (D) slaking
50. Francis turbine is :
- (A) impulse turbine (B) radial flow impulse turbine  
 (C) axial flow turbine (D) reaction radial flow turbine
51. A curve consists of two arcs of equal or different radii bending in opposite direction is :
- (A) Simple curve (B) Compound curve  
 (C) Reverse curve (D) Transition curve

52. The latitude and departure of any point with reference to the preceding point is known as :
- (A) Independent co-ordinate                      (B) Consecutive co-ordinate  
(C) Total latitude                                      (D) Total departure
53. Bernoullis theorem deals with the law of conservation of :
- (A) mass                      (B) momentum                      (C) energy                      (D) velocity
54. For a simply supported beam, the maximum deflection permitted is :
- (A)  $\frac{1}{300}$  of the span                      (B)  $\frac{1}{325}$  of the span  
(C)  $\frac{1}{350}$  of the span                      (D)  $\frac{1}{400}$  of the span
55. In a cantilever retaining wall for height 'H', the horizontal pressure of the earth will act at a distance of :
- (A) H/3 from the top                      (B) H/3 from the base  
(C) H/2 from the top                      (D) H/4 from the base
56. Core-cutter method is used for :
- (A) determining density of soil  
(B) obtaining samples for direct shear test  
(C) determining bearing capacity of soil  
(D) compacting soil
57. The indentation provided in a face of the brick is called :
- (A) Plank                      (B) Pallet                      (C) Striker                      (D) Frog
58. In limit state method of design, the over reinforced sections :
- (A) are not permitted  
(B) are permitted  
(C) are permitted only in extreme fibres  
(D) permitted in any case

59. Polar moment of inertia of a solid shaft of diameter  $D$  is :
- (A)  $\frac{\pi}{16} D^3$       (B)  $\frac{\pi}{16} D^4$       (C)  $\frac{\pi}{32} D^3$       (D)  $\frac{\pi}{32} D^4$
60. A chain 20 m long is 20 cm too short was used to measure a line and the result was 190 m. The true length is :
- (A) 188.1 m      (B) 191.5 m      (C) 193 m      (D) 190 m
61. Combined correction for refraction and curvature of 1 km is :
- (A) 0.0112 m      (B) 0.0673 m      (C) 0.0785 m      (D) 0.0673 km
62. A 15 cm theodolite means :
- (A) length of the telescope is 15 cm      (B) height of standards is 15 cm  
 (C) diameter of lower plate is 15 cm      (D) radius of upper plate is 15 cm
63. CPM stands for :
- (A) Computer Programming Mode      (B) Critical Project Management  
 (C) Critical Path Method      (D) Controlling, Planning and Maintenance
64. The approximate weight of  $1 \text{ m}^3$  of mild steel is :
- (A) 1000 kg      (B) 240 kg      (C) 14000 kg      (D) 7850 kg
65. In a closed traverses the algebraic sum of deflection angle is :
- (A)  $0^\circ$       (B)  $360^\circ$       (C)  $(2n+4) \times 9$       (D)  $(n-2)180$
66. For a level section area of a trapezoidal cut when base width ' $B$ ', side slope ' $S$ ' and depth ' $d$ ' :
- (A)  $Bd + Sd^2$       (B)  $Bd^2 + Sd$       (C)  $Bd - Sd^2$       (D)  $Bd^2 - Sd$
67. In a riveted joint, when the number of rivets decreases from the innermost to the outermost row the joint is said to be :
- (A) Chain      (B) Zig-Zag riveted  
 (C) Diamond riveted      (D) Single riveted



68. The best type of ballast is :  
 (A) granite (B) sandstone (C) limestone (D) quartzite
69. A small reflecting instrument is used to fixing up intermediate points on the line is called :  
 (A) Line ranger (B) Ranging rod (C) Open cross staff (D) Offset rod
70. Hydraulic ram is a pump which works :  
 (A) on the principle of water hammer  
 (B) on the principle of centrifugal action  
 (C) principle of reciprocating action  
 (D) direct action
71. When a water table is within the root zone depth and is determined to the plant life, the land is said to be :  
 (A) basin flooding (B) water logged (C) over nourished (D) super saturated
72. The best pipe for water mains for long life is :  
 (A) steel (B) cement concrete (C) cast iron (D) asbestos cement
73. The best system of a railway highway crossing is :  
 (A) level crossing (B) road over rail track  
 (C) road under rail track (D) both road over and under bridges
74. The process of taking out stones from natural rock is :  
 (A) dressing (B) seasoning (C) quarrying (D) pitching
75. If the higher values are outside, series of closed contours on a plane indicate a ;  
 (A) hill (B) depression (C) valley (D) ridge
76. The surface of a still lake is an example of :  
 (A) Horizontal surface (B) Datum surface  
 (C) Level surface (D) Horizontal plane

77. Two forces P and Q are acting at an angle  $\theta$ , their resultant R is given by :
- (A)  $R = \sqrt{P^2 + Q^2 + 2PQ \sin\theta}$       (B)  $R = \sqrt{P^2 + Q^2 + 2PQ \cos\theta}$   
 (C)  $R = \sqrt{P^2 - Q^2 + 2PQ \cos\theta}$       (D)  $R = \sqrt{P^2 + Q^2 - 2PQ \cos 2\theta}$
78. The road connecting district headquarters of a state is :
- (A) State highway      (B) National highway  
 (C) District major roads      (D) Minor district roads
79. Pile foundations are normally used :
- (A) in soft clayey soils  
 (B) in heavy load situations  
 (C) when the bearing area required is not available  
 (D) in loose sandy soil
80. A simply supported beam of span 'l' carries a point load 'w' at its centre and rigidity of beam is 'EI'. The maximum deflection at the centre is :
- (A)  $\frac{wl^2}{16EI}$       (B)  $\frac{wl^3}{16EI}$       (C)  $\frac{wl^2}{48EI}$       (D)  $\frac{wl^3}{48EI}$
81. The Headquarters of FIFA is located at \_\_\_\_\_.
- (A) New York      (B) Munich      (C) Zurich      (D) London
82. Conaru Hampi's name is associated with \_\_\_\_\_.
- (A) Chess      (B) Badminton      (C) Snooker      (D) Tennis
83. The Chief Minister of Maharashtra is \_\_\_\_\_.
- (A) Ashok Chavan      (B) Deshmukh  
 (C) Devendra Fadnavis      (D) Ajith Pawar
84. The 8<sup>th</sup> G - 20 Summit held at \_\_\_\_\_.
- (A) New Delhi      (B) Moscow      (C) Geneva      (D) Sri Lanka

85. 'Conversations with my life' was written by \_\_\_\_\_.
- (A) Man Mohan Singh (B) R.K. Narayan  
(C) P.V. Narasimha Rao (D) Nelson Mandela
86. Poyikayil Yohanan's name is associated with \_\_\_\_\_.
- (A) PRDS (B) SYDD  
(C) Yogakshema Sabha (D) SNDP
87. The East flowing rivers of Kerala are the tributaries of River \_\_\_\_\_.
- (A) Periyar (B) Bharathapuzha (C) Pampa (D) Kaveri
88. The leader of 'Malayalee Memorial' was \_\_\_\_\_.
- (A) Dr. Palpu (B) G.P. Pillai (C) N. Raman Pillai (D) R. Ranga Rao
89. Who among the following founded the organization 'Samathwa Samajam' ?
- (A) Vaikunda Swamikal (B) Mannathu Padmanabhan  
(C) Sree Narayana Guru (D) Kumaranashan
90. Yogakshema Prasthanam started in the year \_\_\_\_\_.
- (A) 1906 (B) 1908 (C) 1912 (D) 1914
91. Lucknow city is situated on the banks of the river \_\_\_\_\_.
- (A) Gomati (B) Yamuna (C) Ganga (D) Padma
92. Which district in Kerala has the largest forest area ?
- (A) Wayanadu (B) Iduki (C) Malappuram (D) Kasarkodu
93. The first concrete dam in India is \_\_\_\_\_.
- (A) Bhakranangal (B) Hirakud (C) Mattupetti (D) Malambuzha
94. Which temple is known as 'Dakshina Kashi' ?
- (A) Guruvayoor (B) Sabarimala  
(C) Vaikom Siva Temple (D) Panachikadu Temple