

165/2016

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 $1/4^{\text{th}}$
(C) Reduced to its $3/4^{\text{th}}$ (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) $40 \text{ m} \times 40 \text{ m}$, 160 m (B) $60 \text{ m} \times 60 \text{ m}$, 360 m
(C) $80 \text{ m} \times 80 \text{ m}$, 320 m (D) $60 \text{ m} \times 60 \text{ m}$, 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) $R.F \times \text{Actual dimension}$ (B) $R.F \div \text{Actual dimension}$
(C) $\text{Actual dimension} \div R.F$ (D) $R.F \times \text{Maximum length to be read}$
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) $\frac{\pi D^2}{4}$ and $\frac{4D}{3\pi}$ (B) $\frac{\pi D^2}{8}$ and $\frac{4D}{3\pi}$
(C) $\frac{\pi D^2}{8}$ and $\frac{2D}{3\pi}$ (D) $\frac{\pi D^2}{4}$ and $\frac{2D}{\pi}$
56. The path travelled by a projectile in air is :
- (A) Ellipse (B) Parabola
(C) Hyperbola (D) Circle