



# Teachingninja.in



**Latest Govt Job updates**



**Private Job updates**



**Free Mock tests available**



**Visit - [teachingninja.in](https://teachingninja.in)**

# UKPSC Draftsman

**Previous Year Paper**

**Paper-II**

**05 Nov, 2023**



- without break
Two side
with break
1. ✓ A sloping roof formed by four sloping surfaces in four directions is known as  
 (a) Gable roof (b) Mansard roof (c) **Hip roof** (d) Gambrel roof
  2. ✓ Which of the following materials can be used for damp proofing purpose in buildings?  
 (a) Hot bitumen (b) Mastic asphalt (c) Concrete (d) **All of these**
  3. ✓ The material required for terrazzo floor are Semi rigid materials  
 (a) cement and sand. (b) cement and marble chips.  
 (c) cement, sand and marble chips. (d) **white cement, sand and marble chips.**
  4. ✓ In one way R.C.C. slab, distribution steel (HYSD) is taken as 3-5 mm of gross area.  
 (a) **0.12%** (b) 0.15% (c) 0.20% (d) 0.22%
  5. ✓ The ratio of modulus of elasticity of steel to the modulus of elasticity of concrete is called:  
 (a) Bulk modulus (b) Modulus of rigidity  
 (c) **Modular ratio  $M = \frac{E_s}{E_c} = \frac{286}{306}$**  (d) Poisson's ratio
  6. ✓ If 'd' is the effective depth of beam and 'n' is the depth of neutral axis, then lever arm will be  
 (a)  **$d - \frac{n}{3}$**  (b)  $d + \frac{n}{3}$  (c)  $d - \frac{n}{2}$  (d)  $d + \frac{n}{2}$
  7. ✓ In working stress method, factor of safety for cement concrete is taken as  
 (a) 1.5 (b) **3.0** (c) 1.15 (d) 2.0
  8. ✓ If the permissible stress in concrete in bending for M20 grade of concrete is  $7N/mm^2$ , modular ratio will be  
 (a) 18.66 (b) **13.33** (c) 10.33 (d) 9.66
  9. ✓ As per IS 456 : 2000, in R.C.C. column, the minimum diameter of longitudinal bar is  
 (a) 18 (b) 16 (c) 10 (d) **12**
  10. ✓ For a beam of 200 mm × 400 mm, the maximum area of tension reinforcement shall not exceed 0.43%  
 (a) 1600 mm<sup>2</sup> (b) 3600 mm<sup>2</sup> (c) **3200 mm<sup>2</sup>** (d) 4000 mm<sup>2</sup>
  11. ✓ As per IS 456 : 2000, the minimum grade of concrete to be used in R.C.C. is  
 (a) M15 (b) **M20** (c) M25 (d) M30
  12. ✓ Area of 8 mm – 2 legged vertical stirrups is  
 (a) **100.50 mm<sup>2</sup>** (b) 150.25 mm<sup>2</sup> (c) 200.25 mm<sup>2</sup> (d) 50.25 mm<sup>2</sup>
  13. ✓ The code which gives general rules of natural ventilation is  
 (a) **IS 3362** (b) IS 3159 (c) IS 456 (d) IS 800
  14. ✓ A queen post truss is suitable for spans between 8 to 12 m  
 (a) 10 (b) 20 (c) 15 (d) **12**
  15. ✓ Flat arches are used for spans upto  
 (a) **1.5 m** (b) 0.5 m (c) 1.0 m (d) 1.25 m

Series-B

DTM-2



16. Width of carriage way for two lanes with raised kerbs is approximately  
 (a) 5.0 m (b) 7.5 m (c) 10.5 m (d) 5.5 m
17. As per IRC, the value of ruling gradient in plains is  
 (a) 1 in 10 (b) 1 in 20 (c) 1 in 30 (d) 1 in 40
18. The bottom most layer of road pavement is called  
 (a) sub-grade (b) sub-base (c) wearing coat (d) tack coat
19. Camber in the road is provided for  
 (a) effective drainage (b) counteracting the centrifugal force  
 (c) having proper sight distance (d) None of these
20. The background colour of the informatory sign board is  
 (a) red (b) yellow (c) green (d) white/blue
21. Penetration test on bitumen is used for determining its  
 (a) viscosity (b) grade (c) ductility (d) brittleness
22. The maximum width of a vehicle as recommended by IRC is  
 (a) 1.85 m (b) 3.81 m (c) 2.50 m (d) 4.72 m  
 (2.44 m)
23. As per IRC, the maximum value of super elevation in hilly roads not bound by snow, should not be more than  
 (a) 5% (b) 7% (c) 10% (d) 12%
24. As per IRC, the minimum design speed for major district road in mountainous area should be  
 (a) 60 km/hr. (b) 30 km/hr. (c) 50 km/hr. (d) 55 km/hr.
25. Wear of rails is maximum in  
 (a) coastal area (b) tunnels (c) sharp curve (d) tangent track
26. Metal sleepers are superior to wooden sleepers with respect to  
 (a) durability (b) cost (c) fastening (d) track circuiting
27. Which of the following methods of designation of crossing is mostly used in India?  
 (a) Centre line method (b) Straight line method  
 (c) Isosceles angle method (d) Right angle method
28. Number of fish bolts per fish plate is  
 (a) 6 (b) 5 (c) 4 (d) 2
29. Gauge is the distance between  
 (a) running faces of rails (b) outer faces of rails  
 (c) centre to centre of rails (d) half of centre to centre distance of rails
30. The component of a building below the ground is called  
 (a) framed structure (b) hybrid structure  
 (c) super-structure (d) sub-structure
31. Which of the following stones have maximum fire proofing property?  
 (a) Marble (b) Limestone (c) Sandstone (d) Granite



- Handwritten: Necessary meter gauge*
32. The maximum degree of curvature for meter gauge is limited to  
 (a)  $10^\circ$  (b)  $16^\circ$  (c)  $30^\circ$  (d)  $35^\circ$
33. The detention period for oxidation ponds is generally kept as  
 (a) 4–8 hrs. (b) 8–10 hrs. (c) 10–15 hrs. (d) 15–20 hrs.
34. Pathogens can be killed by  
 (a) chlorination (b) nitrification (c) oxidation (d) None of these
35. Sewerage system is generally designed for  
 (a) 75 years (b) 50 years (c) 40 years (d) 25 years
36. Activated carbon is used for  
 (a) disinfection (b) removing hardness (c) removing odours (d) removing corrosiveness
37. The length of rectangular sedimentation tank should not be more than ( $B$  = width of tank)  
 (a)  $4B$  (b)  $8B$  (c)  $2B$  (d)  $B$
38. The percentage of chlorine in fresh bleaching powder is about  
 (a) 10–15% (b) 15–20% (c) 20–25% (d) 25–35%
39. Standard BOD is measured at  
 (a)  $20^\circ\text{C}$  – 3 days (b)  $20^\circ\text{C}$  – 5 days (c)  $25^\circ\text{C}$  – 3 days (d)  $25^\circ\text{C}$  – 5 days
40. Aerobic bacteria can survive only in the presence of :  
 (a) Oxygen (b) Water (c) Sunlight (d) Food
41. What is the condition of 'faint' ?  
 (a) Response to fear (b) Unexpected collapse  
 (c) Brief loss of consciousness (d) Sign of flu
42. How should you open airway of an unconscious person ?  
 (a) Head tilt and chin lift (b) Jaw thrust  
 (c) Head tilt and jaw thrust (d) Lift the chin
43. Arc blast is caused by  
 (a) poor contact between electric wires.  
 (b) radio frequency emission.  
 (c) discharge of high electric current through open air.  
 (d) failure to lock out.
44. Rail is designated by  
 (a) total weight (b) cross-section  
 (c) length (d) weight per unit length
45. Ordinary rails are made of  
 (a) wrought iron (b) high carbon steel (c) cast iron (d) mild steel



46. Which of the following does not represent an activity ?  
(a) Site located (b) Foundation is being dug  
(c) Office area is being cleaned (d) Invitations are being sent
47. The time with which direct cost does not reduce with the increase of time is known as  
(a) crash time (b) normal time  
(c) optimistic time (d) between normal time and crash time
48. The direct cost of a project with respect to normal time will be  
(a) minimum (b) maximum (c) zero (d) infinity
49. Which of the following earth moving machine has the shortest cycle time ?  
(a) Drag line (b) Hoe (c) Calm shell (d) Dipper shovel
50. Cost benefit studies are essential to  
(a) assess the total cost of the work.  
(b) ascertain the relevant escalation in prices.  
(c) monitor the expenditure.  
(d) evaluate the viability and worthwhileness of taking up the project.
51. A contractor has quoted his rate for an item as  $CSR + (SP - 20)$ . If the CSR rate of the item is ₹ 300 and the SP is 50% of CSR. Then the rate to be paid to the contractor will be  
(a) ₹ 390 (b) ₹ 360 (c) ₹ 450 (d) ₹ 430
52. According to alignment, bridges are classified into two types. Which are these two types out of the following ?  
(i) Normal bridge (ii) Skew bridge (iii) Culvert (iv) Viaduct  
(a) (ii) and (iii) (b) (ii) and (iv) (c) (i) and (ii) (d) (i) and (iii)
53. Wing walls in the case of bridges are not kept less than  
(a) 25 cm (b) 50 cm (c) 35 cm (d) 45 cm
54. A bridge is called culvert if its span is upto  
(a) 12 m (b) 10 m (c) 8 m (d) 6 m
55. Optical square is used  
(a) to draw line at  $45^\circ$ . (b) to draw parallel line.  
(c) to draw perpendicular line. (d) to draw line at  $60^\circ$ .
56. Damp proof course is measured in  
(a) m (b)  $m^2$  (c)  $m^3$  (d) kg
57. One cubic meter of mild steel weighs about \_\_\_\_\_ kg.  
(a) 4850 (b) 5850 (c) 6850 (d) 7850

$$\text{not } (180 - 20) \times 430 - 300 + (30) = 330$$



58. A temple is situated on the far side of a river bed and is inaccessible, it can be located by  
 (a) radiation (b) traversing (c) intersection (d) resection
59. In whole circle bearing,  $N15^\circ W$  will be  
 (a)  $345^\circ$  (b)  $375^\circ$  (c)  $285^\circ$  (d)  $71^\circ$
60. Fore bearing of a line AB is  $25^\circ$ , back bearing of AB will be  
 (a)  $170^\circ$  (b)  $195^\circ$  (c)  $215^\circ$  (d)  $205^\circ$
61. Geodetic Surveying is different from Plane Surveying because of:  
 (a) Curvature of Earth.  
 (b) Large difference of elevations between various points.  
 (c) Coverage of very large area.  
 (d) Undulations of the topography.
62. A 30 m metric chain is found to be 10 cm short throughout the measurement. If the distance measured is recorded as 300 m, what is the actual distance?  
 (a) 300.1 m (b) 299.0 m (c) 301.0 m (d) 310.0 m
63. The number of horizontal cross wires in a stadia diaphragm are  
 (a) 3 (b) 2 (c) 4 (d) 5
64. The difference between face left and face right observations of a theodolite is  $3'$ . The error is  
 (a)  $30''$  (b)  $45''$  (c)  $1'30''$  (d)  $3'$
65. The coordinates of A are 100 (Northing) and 200 (Easting) whereas that of B are 100 (Southing) and 200 (Easting), length of AB is  
 (a) 200 (b) 100 (c)  $200\sqrt{2}$  (d)  $100\sqrt{2}$
66. If 16 mm diameter rivet is used, what should be the diameter of rivet hole?  
 (a) 16 mm (b) 17.5 mm (c) 18 mm (d) 19.5 mm
67. The permissible stress in axial tension on the net effective area of the section should not exceed  
 (a) 0.50  $f_y$  (b) 0.60  $f_y$  (c) 0.67  $f_y$  (d) 0.70  $f_y$
68. Maximum slenderness ratio for a strut connected by single rivet at each end is  
 (a) 120 (b) 90 (c) 180 (d) 360
69. The permissible stress in plug weld is  
 (a) 100 MPa (b) 108 MPa (c) 128 MPa (d) 135 MPa
70. The angle of dip at magnetic pole is  
 (a)  $0^\circ$  (b)  $30^\circ$  (c)  $45^\circ$  (d)  $90^\circ$
71. Which of the following is not a fundamental line of theodolite?  
 (a) Vertical axis (b) Axis of telescope (c) Axis of plate level (d) Horizontal axis



72. Which pattern of rivet or bolt joint gives higher efficiency ?  
 (a) Diamond pattern (b) Zig-zag pattern  
 (c) Straight pattern (d) Mixed pattern
73. As per IS : 800, maximum deflection in beam should not exceed ( $L$  = span of beam)  
 (a)  $L/180$  (b)  $L/250$  (c)  $L/325$  (d)  $L/36$
74. In a fillet weld joint, both plates are placed  
 (a) face to face. (b) overlapped to each other.  
 (c) placed at  $45^\circ$ . (d) placed at  $60^\circ$ .
75. The hardware requirement for AUTOCAD 2009 / 2010 are  
 (a) PIV Intel processor and motherboard (b) 160 GB Hard disk  
 (c) 1 GB RAM / 2 GB RAM (d) All of these
76. Which of the following "function key" can be used for online help ?  
 (a) F4 (b) F3 (c) F2 (d) F1
77. In AUTOCAD, F7 command is used for  
 (a) co-ordinate on and off (b) snap mode on and off  
 (c) grid on and off (d) ortho mode on and off
78. Which of the following is an Operating System ?  
 (a) Paint (b) HEC (c) MS Word (d) LINUX
79. Which of the following keyboard command is used to select the data on the screen ?  
 (a) Ctrl + A (b) Ctrl + C (c) Ctrl + D (d) Ctrl + E
80. The most common type of display device for CAD system is  
 (a) PRT (b) ART (c) CRT (d) DRT
81. Which of the following aggregate gives maximum bond strength in concrete ?  
 (a) Rounded aggregate (b) Elongated aggregate  
 (c) Angular aggregate (d) Flaky aggregate
82. Which of the following mortar is most suitable for construction work in water logged area ?  
 (a) Lime mortar (b) Cement mortar (c) Mud mortar (d) Gauged mortar
83. The strength of concrete at 7 days will be about \_\_\_\_\_ of 28 days strength of concrete.  
 (a) 86% (b) 67% (c) 57% (d) 47%
84. If a steel section ISNT 150 @ 223.7 N/m is used, in this 150 denotes  
 (a) depth of the section (b) width of the section  
 (c) length of the member (d) area of the section
85. Nominal diameter of a rivet for connecting plates of thickness " $t$ " is given by Unwin's formula as  
 (a)  $5.34 \sqrt{t}$  (b)  $6.01 \sqrt{t}$  (c)  $5.01 \sqrt{t}$  (d)  $6.34 \sqrt{t}$



86. Unslaked lime is  
(a) calcium carbonate  
(c) calcium hydroxide

(b) calcium oxide  
(d) calcium sulphate

50112  
Ca(OH)<sub>2</sub>  
CaO

87. Size of cube for finding compressive strength of cement is  
(a) 50.6 mm (b) 60.6 mm  
(c) 70.6 mm (d) 80.6 mm

88. Percentage of alumina in a good brick earth is  
(a) 10 to 15% (b) 50 to 60%  
(c) 70 to 80% (d) 20 to 30%

89. In which of the following directions wood have maximum strength?  
(a) Parallel to grains  
(b) 45° to grains  
(c) Perpendicular to grains  
(d) In all directions

90. The trimmed size of A3 drawing sheet in mm will be  
(a) 297 × 420 (b) 210 × 297  
(c) 148 × 210 (d) 420 × 594

91. Which of the scale is largest amongst the following?  
(a) 1 : 200 (b) 1 : 50  
(c) 1 : 25 (d) 1 : 10

92. You want to draw an arc of a circle. The parameters required will be  
(a) three points on the chord of the arc.  
(b) start and centre point of the arc.  
(c) start and end point of the arc.  
(d) centre and end point of the arc.

93. When drawings are drawn smaller than the actual size of the objects, the scale used is called \_\_\_\_\_ scale.  
(a) enlarging (b) reducing  
(c) representative (d) graphical

94. The size of the title block for all sizes of drawing sheets in mm is  
(a) 185 × 75 (b) 195 × 75  
(c) 185 × 65 (d) 160 × 65

95. The lowest part of the super structure between the ground and the floor is called  
(a) D.P.C. (b) Lintel  
(c) Plinth (d) Beam

96. The thickness of the lintel is 80 mm and span of the lintel is 10 m. What will be taken as bearing of the lintel?  
(a) 90 mm (b) 80 mm  
(c) 100 mm (d) 110 mm

97. A door is designated as 9DS20. The height of the door will be  $20 \times Z$  mm, where  $Z =$  \_\_\_\_\_.  
(a) 1000 (b) 1  
(c) 10 (d) 100

98. For a floor height of 3 m, it is proposed to lay a single flight stair case. The riser is 150 mm. Number of treads will be  
(a) 18 (b) 19  
(c) 20 (d) 21

99. Varnish is a homogeneous solution of resin in  
(a) Alcohol (b) kerosene oil  
(c) naptha (d) linseed oil

100. The ratio of Young's modulus of elasticity of high tensile steel to that of mild steel is about  
(a) 1.4 (b) 2.0  
(c) 1.5 (d) 1.0