

Test Booklet
Series

A

Written Test Paper, 2021

Paper No.

33

**DRAFTSMAN
(CIVIL)**

Test Booklet No.

Name of Applicant Answer Sheet No.

Application No. : SVSU/2020/Estt/NT/ Signature of Applicant :

Date of Examination: **25 / 12 / 2021**

Signature of the Invigilator(s)

1.

Time of Examination :

2.

Duration : 2 Hours]

[Maximum Marks : 100

IMPORTANT INSTRUCTIONS

- (i) The question paper is in the form of Test-Booklet containing **90 (Ninty)** questions. All questions are compulsory. Each question carries four answers marked (A), (B), (C) and (D), out of which only one is correct.
- (ii) On receipt of the Test-Booklet (Question Paper), the candidate should immediately check it and ensure that it contains all the pages, i.e., **90** questions (50 in Part-A + 30 in Part-B + 10 in Part-C). Discrepancy, if any, should be reported by the candidate to the invigilator immediately after receiving the Test-Booklet.
- (iii) An Answer-Sheet is provided with the Test-Booklet/Question Paper. On this sheet there are **80** rows (50 in Part-A + 30 in Part-B) containing four circles each. One row pertains to one question. A separate answer sheet is provided to attempt 10 Subjective Questions mentioned in Part-C
- (iv) The candidate should write his/her Application number at the places provided on the cover page of the Test-Booklet/Question Paper and on the Answer-Sheet and **NOWHERE ELSE**.
- (v) No second Test-Booklet/Question Paper and Answer-Sheet will be given to a candidate. The candidates are advised to be careful in handling it and writing the answer on the Answer-Sheet.
- (vi) Marks are indicated in every Part. For every unattempted question, Zero (0) mark shall be awarded. **There is no Negative Marking.**
- (vii) Marking shall be done only on the basis of answers responded on the Answer-Sheet.
- (viii) To mark the answer on the Answer-Sheet, candidate should **darken** the appropriate circle in the row of each question with Blue or Black pen.
- (ix) For each question only **one** circle should be **darkened** as a mark of the answer adopted by the candidate. If more than one circle for the question are found darkened or with one black circle any other circle carries any mark, the question will be treated as cancelled.
- (x) The candidates should not remove any paper from the Test-Booklet/Question Paper. Attempting to remove any paper shall be liable to be punished for use of unfair means.
- (xi) Rough work may be done on the blank space provided in the Test-Booklet/Question Paper only.
- (xii) *Mobile phones (even in Switch-off mode) and such other communication/programmable devices are not allowed inside the examination hall.*
- (xiii) No candidate shall be permitted to leave the examination hall before the expiry of the time.

DO NOT OPEN THIS QUESTION BOOKLET UNTIL ASKED TO DO SO.

[P.T.O.

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PART-A

[Marks : 50

1. One cubic meter of Portland cement is
 - (A) 10 bags
 - (B) 20 bags
 - (C) 30 bags
 - (D) 40 bags
2. In a simply supported beam shear force is zero when bending moment is
 - (A) Maximum
 - (B) Minimum
 - (C) Zero
 - (D) None of the above
3. Generally preferred Stone for railway ballast is
 - (A) Basalt or trap granite
 - (B) Marble
 - (C) Sand stone
 - (D) Slate
4. The diameter of rivet hole is usually..... the nominal diameter of the rivet.
 - (A) Less than
 - (B) Not equal to
 - (C) More than
 - (D) Depends on thickness of plate
5. An object is below HP and behind VP. The object is in
 - (A) 1st quadrant
 - (B) 2nd quadrant
 - (C) 3rd quadrant
 - (D) 4th quadrant
6. An underground passage or tunnel to permit the traffic is called
 - (A) Sub way
 - (B) Driveway
 - (C) Right of way
 - (D) Highway
7. The value of poissons ratio depends on
 - (A) Cross section
 - (B) Magnitude of load
 - (C) Material of test specimen
 - (D) None of the above
8. Disinfection power of chlorine increases with
 - (A) Lower value of pH
 - (B) Higher value of pH
 - (C) At neutral pH
 - (D) Remains unaffected

9. Air valve in water distribution system is provided at
- (A) High points
 - (B) Low points
 - (C) Junction points
 - (D) All of these
10. The maximum area of tension reinforcement in beams shall not exceed
- (A) 4%
 - (B) 1%
 - (C) 1.5%
 - (D) 0.15%
11. As the percentage of steel increases
- (A) Depth of neutral axis decreases
 - (B) Depth of neutral axis increases
 - (C) Lever arm increases
 - (D) Lever arm decreases
12. The factor of safety against sliding for a retaining wall is
- (A) 1.0
 - (B) 1.25
 - (C) 1.5
 - (D) 2.0
13. Design of R.C.C. cantilever beams, is based on the resultant force at
- (A) Fixed end
 - (B) Free end
 - (C) Mid span
 - (D) Mid span and fixed support
14. Reynolds number is the ratio of
- (A) Viscous force to inertia force
 - (B) Elastic to pressure force
 - (C) Gravity to inertia force
 - (D) None of these
15. Tensile strength of steel used in rail should not be less than
- (A) 450 MPa
 - (B) 500 MPa
 - (C) 700 MPa
 - (D) 750 MPa
16. Design of flexible pavements is based on
- (A) Empirical formulae
 - (B) Mathematical analysis
 - (C) Both of these
 - (D) None of these
17. The minimum Water content at which the soil just begins to crumble when rolled into treads 3 mm in diameter, is known as
- (A) Liquid limit
 - (B) Plastic limit
 - (C) Shrinkage limit
 - (D) Permeability limit

18. The liquid limit and plastic limit exist in
- (A) Sandy soils
(B) Silty soils
(C) Gravel soils
(D) Clayey soils
19. The relationship between void ratio (e) and porosity ratio (n) is
- (A) $n = (1 + e)/(1 - e)$
(B) $n = (1 - e)/(1 + e)$
(C) $n = e/(1 - e)$
(D) $e = n/(1 - n)$
20. In plane geometry the sum of angles of a triangle is two right angles, whereas in spherical geometry it is always
- (A) Equal to two right angles
(B) Less than two right angles
(C) Greater than two right angles
(D) None of the above
21. The untrimmed size of A2 drawing sheet is
- (A) 450 × 625 mm
(B) 420 × 594 mm
(C) 594 × 841 mm
(D) 625 × 880 mm
22. To observe an included angle with better accuracy with a Vernier theodolite, is preferred method of
- (A) repetition
(B) reiteration
(C) double observation
(D) exactness
23. The contour interval is kept inversely proportional to
- (A) Time and expense of the work
(B) Steepness and configuration of the area
(C) Scale of the map
(D) All the above
24. If deflection angles are measured in a closed traverse, the difference between the sum of the right-hand and that of the left hand angles should be equal to
- (A) 0°
(B) 90°
(C) 180°
(D) 360°
25. The damp proof course (D.P.C.) is measured in
- (A) Cub. m
(B) Sq. m
(C) Meters
(D) None of these

26. Girths of the trees are to be measure at a height above the ground level .
- (A) 0.75 m
 - (B) 1 m
 - (C) 2 m
 - (D) -3 m
27. A queen post roof truss is suitable for roofs to span varying from
- (A) 5 to 8 m
 - (B) 8 to 12 m
 - (C) 12 to 15 m
 - (D) 4 to 6 m
28. AutoCAD is developed by which of these countries?
- (A) United Kingdom
 - (B) United States
 - (C) Japan
 - (D) France
29. What is the length of surveyor's chain?
- (A) 50 ft
 - (B) 60 ft
 - (C) 66 ft
 - (D) 70 ft
30. Method of surveying to determine the relative elevation of the points on the surface of the earth is called
- (A) Levelling
 - (B) Remote sensing
 - (C) Chaining
 - (D) None of these
31. Apex line of a slopping roof is called
- (A) Cleats
 - (B) Purlins
 - (C) Ridge
 - (D) None of these
32. Which axis is not used while working in 2-D Frame?
- (A) X-axis
 - (B) Y-axis
 - (C) Z-axis
 - (D) WCS
33. Which is not a keyboard shortcut of AutoCAD?
- (A) Alt+F4
 - (B) Alt+B
 - (C) Ctrl+P
 - (D) Ctrl+F4

34. CAD systems for “rounding corners” are
- (A) Curve
 - (B) Fillet
 - (C) Chamfer
 - (D) Smooth
35. How many workspaces are available in AutoCAD?
- (A) 3
 - (B) 4
 - (C) 5
 - (D) 6
36. Which key is used to obtain properties palette in AutoCAD?
- (A) Ctrl+1
 - (B) Ctrl+F2
 - (C) Ctrl+4
 - (D) Ctrl+f5
37. Gypsum is added in the manufacture of port land cement in order to
- (A) Shorten the setting time of cement
 - (B) Lengthen the setting time of cement
 - (C) Decrease the burning temperature
 - (D) Decrease the grinding time
38. The cementing property in cement is mainly due to
- (A) Lime
 - (B) Silica
 - (C) Iron oxide
 - (D) Alumina
39. The ultimate strength of cement is provided by
- (A) Silica
 - (B) di-calcium silicate
 - (C) tri-calcium aluminate
 - (D) All of these
40. The maximum water-cement ratio for durable concrete is
- (A) 0.2
 - (B) 0.4
 - (C) 0.6
 - (D) 0.8
41. A stretcher bond is usually used for
- (A) Half brick wall
 - (B) One brick wall
 - (C) One and half brick wall
 - (D) Two brick wall

42. The arrangement of bricks is similar to English bond in
- (A) Raking bond
(B) Dutch bond
(C) Facing bond
(D) Heading bond
43. When the length of chain used in measuring distance is longer than the slandered length, the error in measured distance will be
- (A) Positive error
(B) Negative error
(C) Compensating error
(D) None of these
44. A staff reading taken on a point whose elevation is to be determined as on a change point is called
- (A) Fore sight reading
(B) Back sight reading
(C) Intermediate sight
(D) None of these
45. In plane tabling, the instrument used to measure horizontal and vertical distances directly, is known as
- (A) Plane alidade
(B) Telescopic alidade
(C) Tacheometer
(D) Clinometers
46. The relation between duty (D) in hectares/ cumec, delta (Δ) in meters and base period (B) in days is
- (A) $\Delta = \frac{8.64B}{D}$
(B) $\Delta = \frac{86.4B}{D}$
(C) $\Delta = \frac{864B}{D}$
(D) $\Delta = \frac{8640B}{D}$
47. According to Dicken's formula, the flood discharge (Q) in cumecs is given by.... where C = Flood coefficient, and A= Area of basin in sq km.
- (A) $Q = CA^{\frac{2}{3}}$
(B) $Q = CA^{\frac{3}{4}}$
(C) $Q = CA^{\frac{5}{6}}$
(D) $Q = CA^{\frac{7}{8}}$
48. In case of small channels, the borrow pits should start from a distance not less than From the toe of the embankment.
- (A) 2 m
(B) 3 m
(C) 4 m
(D) 5 m

49. The maximum spacing of vertical reinforcement in R.C.C. wall should not exceed The thickness of wall.
- (A) Equal to
 - (B) 1.5 times
 - (C) 2 times
 - (D) 3 times
50. The analysis of slab spanning in one direction is done by assuming it to be a beam of
- (A) 1 m length
 - (B) 1 m width
 - (C) 1 m² area
 - (D) None of these

PART-B

[Marks : 30

51. $25 : 37 :: 49 : ?$

- (A) 41
- (B) 65
- (C) 56
- (D) 60

52. Find the missing character?

4C	2B	3A
28A	?	45B
7C	5A	15B

- (A) 10C
- (B) 12C
- (C) 13C
- (D) 7C

53. Pointing at a photo, Dinesh said, "His father is only son of my mother." The photo belongs to :

- (A) Dinesh
- (B) Dinesh's brother
- (C) Dinesh's father
- (D) Dinesh's son

54. Rakesh ranks 13th in the class of 33 students. There are 5 students below Mahesh rankwise. How many students are there between Rakesh and Mahesh ?

- (A) 12
- (B) 14
- (C) 15
- (D) 16

55. QAR, RAS, SAT, TAU, _____

- (A) UAV
- (B) UAT
- (C) TAS
- (D) TAT

56. Choose the word which is different from the rest.

- (A) Pear
- (B) Apple
- (C) Litchi
- (D) Orange

57. Before you gave answers, sir them to us.

- (A) sent
- (B) will send
- (C) had sent
- (D) was sending

58. Look, a new missile

- (A) is launched
- (B) is launch
- (C) is being launch
- (D) is being launched

59. The paths of glory lead to the grave.

- (A) straight
- (B) but
- (C) in
- (D) directly

60. You haven't had your lunch yet, you?

- (A) are
- (B) aren't
- (C) have
- (D) haven't

61. Which sequence makes a correct sentence?

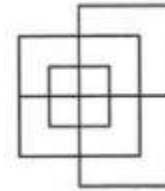
- 1. tea
- 2. have
- 3. that
- 4. some
- 5. before

- (A) 43251
- (B) 24315
- (C) 24153
- (D) 52431

62. He reminds us Paul Walker.

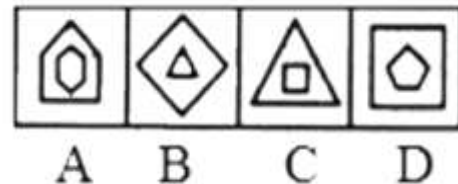
- (A) about
- (B) of
- (C) for
- (D) with

63. Find the minimum number of straight lines required to make the given figure.



- (A) 13
- (B) 15
- (C) 17
- (D) 19

64. Select the figure that does NOT belong in the following group.



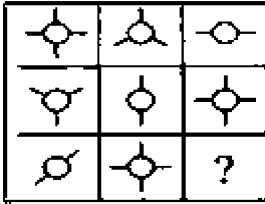
- (A) B
- (B) A
- (C) D
- (D) C

65. P, Q, R and S are four friends. P is shorter than Q but taller than R who is shorter than S. Who is the shortest among all?

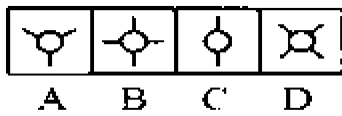
- (A) P
- (B) Q
- (C) R
- (D) S

66. Select the Answer figure that fits in the blank space in the given problem figure.

Problem Figure



Answer Figure



- (A) D
(B) C
(C) B
(D) A

67. From the given alternatives, select the word which CANNOT be formed using the letters of the given word.

Demonstration

- (A) Moon
(B) Most
(C) Train
(D) Damage

68. If white is called black, black is called red, red is called yellow, yellow is called green, green is called blue, blue is called violet and violet is called orange, what would be the colour of human blood?

- (A) green
(B) black
(C) red
(D) yellow

69. A train running at 90 km/hr crosses a pole in 10 seconds. What is the length of train?

- (A) 250 m
(B) 150 m
(C) 900 m
(D) None of these

70. Which is in ascending order?

- (A) $1/3, 2/5, 3/5, 6/7$
(B) $2/5, 1/3, 3/5, 6/7$
(C) $1/3, 2/5, 6/7, 3/5$
(D) $3/5, 6/7, 1/3, 2/5$

71. The average of four consecutive odd numbers is 24. Find the largest number.

- (A) 25
(B) 27
(C) 29
(D) 31

72. Sum of a rational number and its reciprocal is $13/6$. Find the number

- (A) 2
(B) $3/2$
(C) $4/2$
(D) $5/2$

73. Half of 1 percent written as decimal is
(A) 5
(B) 0.5
(C) 0.05
(D) 0.005
74. A person incurs a loss of 5% by selling a watch for Rs. 1140. At what price should the watch be sold to earn 5% profit.
(A) Rs. 1200
(B) Rs. 1230
(C) Rs. 1260
(D) Rs. 1290
75. A fungal disease named 'Mucormycosis' is registered in COVID-19 patients of which state?
(A) Kerala
(B) Gujarat
(C) Bihar
(D) Assam
76. "Energy Conservation Week" is observed every year in which month?
(A) October
(B) November
(C) December
(D) January
77. Who has been appointed as the Chief of Staff Committee, following the demise of General Bipin Rawat?
(A) M.M. Naravane
(B) Karambir Singh
(C) R.K.S. Bhaduria
(D) Vijay Kumar Singh
78. Which state after Haryana has recently announced 75% reservation in private sector jobs for locals?
(A) Uttar Pradesh
(B) Rajasthan
(C) Uttarakhand
(D) Jharkhand
79. The first-ever Haryana Sahitya Sangam has started in which city?
(A) Faridabad
(B) Panchkula
(C) Gurgaon
(D) Karnal
80. The Ministry of Labour recently launched India's first national database on unorganised workers on which portal?
(A) e-Shram portal
(B) Samadhan portal
(C) Atma Nirbhar Bharat portal
(D) None of the above

PART-C

[Marks : 20

Fill in the blanks. Each question carries 2 marks

81. Water supply scheme is designed @ lpcd in villages and @ lpcd for towns for tube well based scheme in the State of Haryana.
82. Name of test conducted to check workability of concrete is and soundness of cement is tested by method.
83. The maximum Bending Moment carrying udl (wl) for simply supported beam is and for fixed beam is
84. The chapter no. of HSR 2011 (applicable till 2021) for concrete work is and for steel work is
85. State reasons for keeping the floor level of pump room of water works as depressed.
86. How much is permissible FAR as per Haryana Building By-Laws & permissible limit for ground coverage as per Haryana Building By-Laws in public buildings.
87. Write three materials commonly used as disinfectant for water.
88. What is the difference between compaction and consolidation?
89. What is the difference between aerobic bacteria & anaerobic bacteria?
90. Write formula to calculate Break Horse Power (BHP) of the Pump.

ROUGH WORK

ROUGH WORK

ANSWER KEY- Draftsman Civil

1. C	26. B	51. B	76. C
2. A	27. B	52. A	77. A
3. A	28. B	53. D	78. D
4. C	29. C	54. B	79. B
5. C	30. A	55. A	80. A
6. A	31. C	56. D	
7. C	32. C	57. C	
8. A	33. B	58. D	
9. A	34. B	59. B	
10. A	35. A	60. C	
11. B	36. A	61. C	
12. C	37. B	62. B	
13. A	38. A	63. A	
14. D	39. B	64. A	
15. C	40. D	65. C	
16. D	41. A	66. D	
17. B	42. B	67. D	
18. D	43. B	68. D	
19. D	44. A	69. A	
20. C	45. B	70. A	
21. B	46. A	71. B	
22. A	47. B	72. B	
23. B	48. D	73. D	
24. D	49. D	74. C	
25. B	50. B	75. B	