

Question Booklet and Answer Key
For Recruitment Test Held on
21.11.2015 (Evening)
Post: SDE (CIVIL/PUBLIC HEALTH)

1. ਜ਼ਖ਼ਮਾਂ ਤੇ..... ਮੁਹਾਵਰਾ ਪੂਰਾ ਕਰੋ:
 (A) ਮਲ੍ਹਮ ਲਾਉਣਾ (B) ਘਿਓ ਲਾਉਣਾ
 (C) ਨਮਕ ਛਿੜਕਣਾ (D) ਪਾਣੀ ਪਾਉਣਾ
2. ਹੇਠ ਲਿਖਿਆਂ ਵਿੱਚੋਂ ਸ਼ੁੱਧ ਵਾਕ ਚੁਣੋ:
 (A) ਮੁੰਡੇ ਦੌੜਦੇ ਹੈ (B) ਮੁੰਡੇ ਦੌੜਦਾ ਹੈ
 (C) ਮੁੰਡਾ ਦੌੜਦੇ ਹਨ (D) ਮੁੰਡੇ ਦੌੜਦੇ ਹਨ
3. ਸ਼ੁੱਧ ਸ਼ਬਦ-ਜੋੜ ਚੁਣੋ:
 (A) ਸੇਹਤ (B) ਸੇਅਤ (C) ਸਿਹਤ (D) ਸੇਹਤਿ
4. 'ਮਲਵਈ' ਕੀ ਹੈ?
 (A) ਭਾਸ਼ਾ (B) ਉਪ-ਭਾਸ਼ਾ (C) ਟਕਸਾਲੀ ਭਾਸ਼ਾ (D) ਖੇਤਰ
5. ਵਿਸ਼ੇਸ਼ਣ ਦੀਆਂ ਕਿੰਨੀਆਂ ਕਿਸਮਾਂ ਹੁੰਦੀਆਂ ਹਨ:
 (A) ਪੰਜ (B) ਛੇ (C) ਸੱਤ (D) ਅੱਠ

Directions (Q. No. 6 to 8) : Mark the correct opposite of the given word out of the four options:

6. Remonstrate:
 A) Accept B) Remnant C) Protest D) Remorse
7. Remorseful
 A) Contrite B) Remarkable C) Unrepentant D) Remediable
8. Snug
 A) Bleak B) Snooze C) Snoop D) Bright

Directions (Q.No. 9-10): Mark the correct preposition to be filled in the blanks:

9. Suresh is deliberating _____ the matter.
 A) of B) with C) on D) at
10. He atoned _____ the sin by giving alms to the poor.
 A) for B) with C) at D) over
11. The Flag Code of India 2002 took effect from:
 A) 26 January 2005 B) 30 January 2003
 C) 26 January 2004 D) 26 January 2002
12. The State Emblem of the Government of India was adopted by the Government of India on:
 A) 15 August 1948 B) 15 August 1947
 C) 26 January 1949 D) 26 January 1950
13. Fundamental Rights of the citizens of India are contained in:
 A) Part III of the Constitution of India
 B) Part II of the Constitution of India
 C) Part IV of the Constitution of India
 D) Part V of the Constitution of India
14. The Cabinet Secretariat functions directly under:
 A) the President of India B) the Prime Minister of India
 C) the Home Minister of India D) the Speaker of Lok Sabha

- Contd.

26. Sports Authority of India was set up by Government of India in:
A) 1994 B) 1981 C) 1989 D) 1984
27. The headquarters of the IOC is located at :
A) Lausanne B) Paris C) Berlin D) Rome
28. The Asian Development Bank has its headquarters at:
A) New Delhi B) Manila C) Tokyo D) Ottawa
29. Graminology is the study of:
A) Grammar B) Germs C) Gems D) Grasses
30. Proxemics is the study of:
A) a person's need for personal space B) a person's need for money
C) a person's need for travelling D) a person's need for literacy
31. Permanent hardness of water is due to the presence of:
A) Calcium bicarbonate B) Magnesium bicarbonate
C) Calcium Sulphate D) Sodium bicarbonate
32. Direct Action Campaign launched by Muslim League happened in:
A) 1947 B) 1948 C) 1945 D) 1946
33. The Second Battle of Panipat was fought in:
A) 1575 B) 1556 C) 1542 D) 1545
34. Which of the following leaders did preside over the inaugural session of the Constituent Assembly in India:
A) Sachidanand Sinha B) B.R. Ambedkar
C) B.N. Rao D) C. Rajagopalachari
35. Achanakumar Sanctuary is located at:
A) Jabalpur (Madhya Pradesh) B) Bilaspur (Chhattisgarh)
C) Monghyr (Bihar) D) Bhandara (Maharashtra)
36. Introducing A to C, B said that A is C's maternal grandfather's son's son and is B's parental uncle's son. How is B related to C ?
A) brother B) sister C) cousin D) uncle
37. Two cars A and B standing at a distance of 1 Km. travel 7 Km. towards North. Car A travels 5 Km. to its left followed by 6 Km. towards South and finally 8 Km. to its right. Car B travels 4 Km. to its right then 6 Km. towards South and finally 17 Km. to its left. What is the distance between car A and B if initially A was to the West of B?
A) 30 Km. B) 25 Km. C) 24 Km. D) 35 Km.
38. In a certain language, the word CASUAL is coded as FBLPBX. How is the word ZODIAC coded in that language ?
A) ZDIIBF B) ZPDRAL C) AOHRAC D) ZDHRBF

Directions : Study the following information and answer Q. Nos. 39 – 40.

7 cities Aland, Bali, Chambal, Deccan, Eluru, Fatehgarh and Garwa are connected by roads as :

One way roads from Aland to Eluru and Garwa; from Bali to Chambal and Fatehpur; from Chambal to Garwa and Fatehpur; from Deccan to Eluru and Bali, from Eluru to Chambal; from Garwa to Fatehpur; and from Fatehpur to Aland.

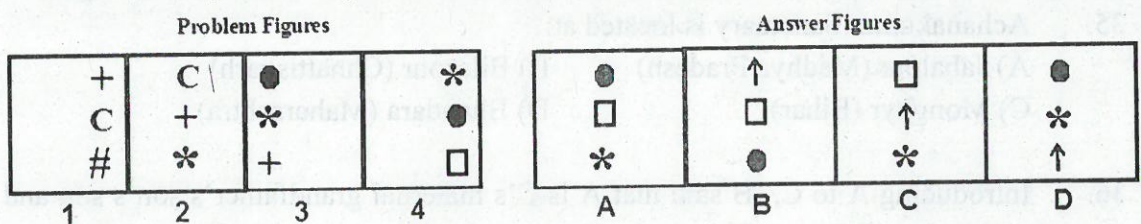
Two way roads are from Aland to Bali; from Bali to Eluru and from Deccan to Garwa. While travelling from one city to other, no intervening city should be visited more than once.

39. The number of different routes to travel from Chambal to Deccan is :
 A) 1 B) 2 C) 3 D) 4
40. What is the maximum number of cities that can be visited while travelling from Garwa to Chambal?
 A) 5 B) 4 C) 3 D) 6
41. In a town 65% people watched the news on T.V., 40% read newspaper and 25% read newspaper as well as watched news on T.V. What is the percentage of people who neither watched T.V. nor read newspaper ?
 A) 5 B) 10 C) 15 D) 20
42. Replace the questions (?) marks, from amongst the given alternatives :

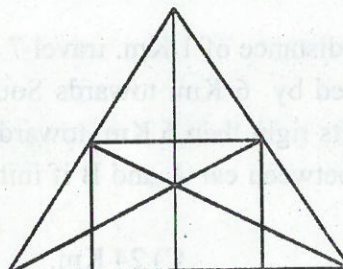
CK	16	9	JR
OS	24	19	TX
KM	?	?	PV

- A) 14, 21 B) 21, 14 C) 56, 84 D) 84, 56

43. Select the Figure amongst the Answer Figures, that will continue the series established by the four problem figures.

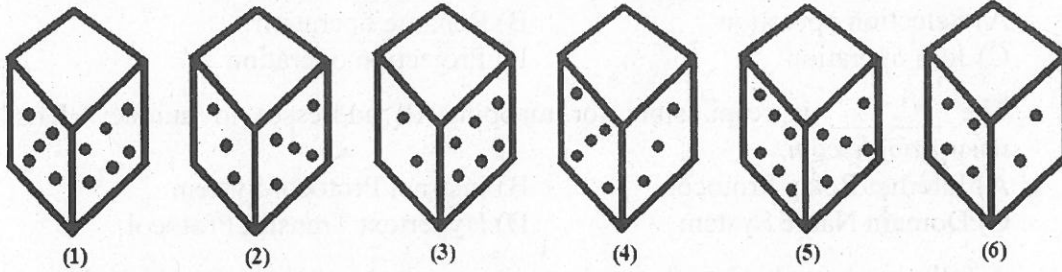


44. Find the number of straight lines and triangles in the given figure :



- A) 10 straight lines and 34 triangles B) 9 straight lines and 34 triangles
 C) 9 straight lines and 36 triangles D) None of the above

45. Six dice with their upper faces erased are as follows :



The sum of dots on opposite faces is 7

If even numbered dice have even number of dots on their top faces, what would be the total number of dots on the top faces of these dice ?

- A) 18 B) 14 C) 12 D) 10
46. A is elder to B while C and D are elder to E who lies between A and C. If C be elder to B, which one of the following statements is definitely correct ?
 A) A is elder to C B) C is elder to D
 C) D is elder to C D) E is elder to B
47. **On the basis of following information, answer the question.**
 (i) A, B, C, D, E, F and G are sitting on a wall facing East (ii) C is on the immediate right of D (iii) B is at the extreme end and has E as his neighbour (iv) G is between E and F (v) D is sitting 3rd from South end.
 Name the person who should change the place with C such that he gets 3rd place from the North end :
 A) E B) G C) F D) D
48. In the following series of letters, some definite order determines which of the next two letters are in the correct order :
A J K T U B I L S V C H M R W D G N Q X E F O ? ?
 A) P Y B) P Z C) Y Z D) Z A
49. Find the odd one :
 (i) Wall (ii) Roof (iii) Beam (iv) House
 A) (i) B) (ii) C) (iii) D) (iv)
50. If R : Addition; S : subtraction; T : multiplication; U : division;
 V : equal to ; W : greater than; X : less than
 Identify the correct alternative amongst the below according to above symbols :
 A) 16 T 2 R 4 U 6 X 8 B) 16 R 2 S 4 V 6 R 8
 C) 16 T 2 U 4 V 6 R 8 D) 16 U 2 R 4 S 6 W 8
51. In databases, what does ACID stand for?
 A) Atomicity, Concurrency, Isolation, Durability
 B) Atomicity, Consistency, Isolation, Duration
 C) Atomicity, Consistency, Indexing, Durability
 D) Atomicity, Consistency, Isolation, Durability

52. 'AS' clause is used in SQL for :
 A) Selection operation B) Rename operation
 C) Join operation D) Projection operation
53. The _____ is responsible for mapping IP addresses to unique URLs such as *www.google.com*.
 A) Internet Relay Protocol B) Internet Protocol System
 C) Domain Name System D) Hypertext Transfer Protocol
54. A fully connected network topology is a network topology in which there is a direct link between all pairs of nodes. Given a fully connected network with n nodes, express the number of direct links as a function of n :
 A) $\frac{n(n+1)}{2}$ B) $\frac{(n+1)}{2}$ C) $\frac{n}{2}$ D) $\frac{n(n-1)}{2}$
55. This concept means that the programs currently being executed are stored on disk and portions of these programs are brought into memory as needed :
 A) Multiprocessing B) Virtual Storage
 C) Spooling D) Resource allocation
56. In operating systems, a measure of the number of processes completed per time unit is called:
 A) Throughput B) Waiting time C) Response time D) CPU utilization
57. Which of the following represents the life-cycle of software development?
 A) Analysis → Design → Coding → Testing → Operation and Maintenance
 B) Design → Analysis → Coding → Testing → Operation and Maintenance
 C) Design → Analysis → Coding → Testing
 D) Analysis → Design → Coding → Operation and Maintenance
58. If $(211)_x = (152)_8$, then the value of base x is:
 A) 6 B) 5 C) 7 D) 9
59. Printer resolution is measured by the number of _____.
 A) characters per second (cps) B) dots per inch (dpi)
 C) pages per minute (ppm) D) spots per centimeter (spc)
60. A _____ is a small program that helps to automate a frequently used series of commands in most productivity software tools.
 A) Macro B) Utility C) Template D) Wizard
61. The unit of kinematic viscosity is :
 A) gm/cm-sec^2 B) dyne-sec/cm^2 C) $\text{gm/cm}^2\text{-sec}$ D) cm^2/sec
62. The intensity of pressure developed by surface tension of 0.075 N/m in a droplet of water of 0.075mm diameter is :
 A) 0.8 N/cm² B) 0.6 N/cm² C) 0.4 N/cm² D) 400 N/cm²
63. A vertical triangular area with vertex downward and altitude 'h' has its base lying on the free surface of a liquid. The centre of pressure below the free surface is at a distance of :
 A) $h/4$ B) $h/3$ C) $h/2$ D) $2h/3$

64. Equation of continuity is based on the principle of conservation of :
 A) Mass B) Energy C) Momentum D) None of the above
65. With rise of temperature, the sensitivity of a bubble tube in surveying instrument :
 A) decreases B) increases
 C) remains unaffected D) None of the above
66. Intersection method of detailed plotting is most suitable for :
 A) forests B) urban areas C) hilly areas D) plains
67. The tilt displacement in an axial photograph is radial from :
 A) plumb point B) isocentre point
 C) principal point D) nadir point
68. The radius of curvature of an ideal transition curve should be :
 A) inversely proportional to its length from the beginning
 B) directly proportional to its length from the beginning
 C) proportional to the speed of the vehicle
 D) proportional to the superelevation
69. Cyclonic precipitation is caused by lifting of an air mass due to :
 A) pressure difference B) temperature difference
 C) natural topographical barriers D) all of the above
70. Coefficient of variation is given by :
 A) $\frac{\text{standard deviation}}{\text{mean}} \times 100$ B) $\frac{\text{Variance}}{\text{mean}} \times 100$
 C) $\frac{\text{mean}}{\text{standard deviation}} \times 100$ D) $\frac{\text{mean}}{\text{variance}} \times 100$
71. The best unit duration of storm for a unit hydrograph is :
 A) 1 hour B) One- fourth of basin log
 C) One – half of basin log D) Equal to basin log
72. Seepage through foundation in an earthen dam is controlled by providing :
 A) Rock toe B) Horizontal blanket
 C) Impervious cut off D) Chimney drain
73. Compared to a level surface, on a descending gradient, the stopping sight distance is :
 A) less B) more C) same D) dependent on the speed
74. The percentage compensation in gradient for ruling gradient of 4% and horizontal curve of radius 760m is :
 A) 0.1% B) 1% C) 10% D) No compensation
75. "Dead slow" is a :
 A) Regulatory sign B) Warning sign
 C) Informatory sign D) None of the above

76. In CBR test, the value of CBR is calculated at :
 A) 2.5mm penetration only B) 5.0mm penetration only
 C) 7.5mm penetration only D) Both 2.5mm and 5.0mm penetration
77. The side slope of embankments for a railway track is generally taken as :
 A) 1:1 B) 1:5:1 C) 2:1 D) 1:2
78. Dog spikes are used for fixing rail to the :
 A) Wooden sleepers B) CST-9 sleepers
 C) Steel trough sleepers D) Concrete sleepers
79. The equilibrium superelevation to be provided on a curve of radius 'R' meters and speed of vehicle 'V' kmph is given by :
 A) $\frac{GV^2}{127 R}$ B) $\frac{GV^2}{160 R}$
 C) $\frac{GV^2}{147 R}$ D) $\frac{GV^2}{217 R}$
 where 'G' is gauge.
80. Which of the following values of pH represents a stronger acid ?
 A) 2 B) 5 C) 7 D) 10
81. The alum, when added as a coagulant in water :
 A) Does not require alkalinity in water for flocculation
 B) Does not affect pH value of water
 C) Increases pH value of water
 D) Decreases pH value of water
82. The process in which the chlorination is done beyond the break point is known as :
 A) pre chlorination B) post chlorination
 C) super chlorination D) break point chlorination
83. The working conditions in Imhoff tanks are :
 A) aerobic only
 B) anaerobic only
 C) aerobic in lower compartment and anaerobic in upper compartment
 D) anaerobic in lower compartment and aerobic in upper compartment
84. Latest start of an activity is always :
 A) greater than or equal to latest event time of preceding node
 B) less than or equal to latest event time of preceding node
 C) equal to latest event time of preceding node
 D) less than latest event time of preceding node
85. The time corresponding to minimum total project cost is :
 A) crash time B) normal time
 C) optimistic time D) between normal time and crash time

86. Economic saving of time results by crashing :
 A) cheapest critical activity B) cheapest non-critical activity
 C) costliest critical activity D) costliest non-critical activity
87. A soil has a bulk density of 22 kN/m^3 and water content 10%. The dry density of soil is :
 A) 18.6 kN/m^3 B) 20.0 kN/m^3 C) 22.0 kN/m^3 D) 23.2 kN/m^3
88. If the plasticity index of a soil mass is zero, the soil is :
 A) Sand B) Silt C) Clay D) Clayey Silt
89. The clay mineral with the largest swelling and shrinkage characteristics is :
 A) kaolinite B) illite
 C) montmorillonite D) none of the above
90. Phreatic line in an earthen dam is :
 A) straight line B) parabolic
 C) circular D) elliptical
91. Relationship between dry density γ_d , percentage air voids n_a , water content 'w' and specific gravity 'G' of any soil is :
 A) $\gamma_d = (1 + n_a) G \gamma_w / 1 + wG$ B) $\gamma_d = (1 + n_a) G \gamma_w / 1 - wG$
 C) $\gamma_d = (1 - n_a) G \gamma_w / 1 + wG$ D) $\gamma_d = (1 - n_a) G \gamma_w / 1 - wG$
92. The moisture content in a well seasoned timber is :
 A) 4 to 6% B) 10 to 12% C) 15 to 20% D) 100%
93. Which of the following trees yield hardwood ?
 A) Deodar B) Chir C) Shishum D) Pine
94. Le-chatelier's device is used for determining the :
 A) Setting time of cement B) Soundness of cement
 C) Tensile strength of cement D) Compressive strength of cement
95. The differential settlement in case of foundation on sandy soils should not exceed :
 A) 25mm B) 40mm C) 65mm D) 100mm
96. The split tensile strength of M15 grade of concrete when expressed as a percentage of its compressive strength is :
 A) 10 to 15% B) 15 to 20% C) 20 to 25% D) 25 to 30%
97. The relationship between Young's modulus of elasticity E, bulk modulus K and Poisson's ratio μ is given by :
 A) $E = 2K(1-2\mu)$ B) $E = 3K(1+\mu)$ C) $E = 3K(1-2\mu)$ D) $E = 2K(1+\mu)$
98. Weakest section in a fillet weld is :
 A) Throat of the fillet B) Smaller side
 C) Side parallel to force D) Side perpendicular to force

99. The state of pure shear stress is produced by :
 A) tension in one direction and equal compression in perpendicular direction
 B) equal tension in two directions at right angles
 C) equal compression in two directions at right angles
 D) none of the above
100. The variation of the bending moment in the portion of a beam carrying linearly varying load is :
 A) linear B) parabolic C) cubic D) constant
101. The centre of gravity of a hemisphere of radius 'r' from its base measured along the vertical radius is :
 A) $4r/3$ B) $3r/2$ C) $3r/8$ D) $4r/7$
102. The moment of inertia of a circular disc of radius 'R' and mass 'M' about its diameter is :
 A) MR^2 B) $\frac{MR^2}{2}$ C) $\frac{MR^2}{3}$ D) $\frac{MR^2}{4}$
103. A cylinder will slip on an inclined plane of inclination " θ " if the coefficient of static friction between plane and cylinder is :
 A) Less than $(1/3) \tan \theta$ B) Less than $(2/3) \tan \theta$
 C) Less than $(1/3) \sin \theta$ D) Less than $(2/3) \cos \theta$
104. The dimensions of centrifugal force are :
 A) $M^1 L^2 T^{-2}$ B) $M^1 L^1 T^{-1}$ C) $M^1 L^1 T^{-2}$ D) $M^1 L^{-1} T^{-2}$
105. In SI units, the units of force and energy are :
 A) Newton and Watt B) Dyne & Newton
 C) Newton & Joule D) Kg- wt. and Joule
106. A pin-jointed plane frame is unstable, if :
 A) $(m + r) < 2j$ B) $m + r = 2j$
 C) $(m + r) > 2j$ D) None of the above
107. The degree of kinematic indeterminacy of a pin-jointed space frame is :
 A) $2j - r$ B) $3j - r$ C) $j - 2r$ D) $j - 3r$
 where 'j' is the number of joints and 'r' is reaction components.
108. The Castigliano's second theorem can be used to compute deflections :
 A) in statically determinate structures only B) for any type of structure
 C) at the point under the load only D) for beams and frames only
109. Effects of shear force and axial force on plastic moment capacity of a structure are respectively to :
 A) Increase and decrease B) Increase and increase
 C) Decrease and increase D) Decrease and decrease

110. Efficiency of a riveted joint, having the minimum pitch as per BIS: 800, is :
 A) 40% B) 50% C) 60% D) 70%
111. The slenderness ratio of lacing bars should not exceed :
 A) 100 B) 120 C) 145 D) 180
112. The maximum spacing of vertical stiffeners is :
 A) 1.33 d B) 1.25 d C) 1.5 d D) 1.75 d
 where 'd' is the distance between flange angles.
113. Steel tanks are mainly designed for :
 A) Weight of tank B) Wind pressure
 C) Water pressure D) Earthquake forces
114. The bracing provided in the plane of end post is called :
 A) Sway bracing B) Portal bracing
 C) Top lateral bracing D) Bottom lateral bracing
115. The strength of concrete after one year as compared to 28 days strength is about :
 A) 10 to 15% more B) 15 to 20% more
 C) 20 to 25% more D) 25 to 50% more
116. Approximate value of shrinkage strain in concrete, is :
 A) 0.003 B) 0.0003 C) 0.00003 D) 0.03
117. 5% of voids in a concrete mix would reduce its strength by about approximately :
 A) 5% B) 10% C) 30% D) 20%
118. A higher modular ratio shows :
 A) Higher compressive strength of concrete
 B) Lower compressive strength of concrete
 C) Higher tensile strength of steel
 D) Lower tensile strength of steel
119. According to BIS recommendations, the maximum depth of stress block for balanced section of a beam of effective depth 'd' is :
 A) 0.43 d B) 0.55 d
 C) 0.68 d D) 0.85 d
120. Strain energy stored in a member is given by :
 A) $0.5 \times \text{stress} \times \text{volume}$ B) $0.5 \times \text{strain} \times \text{volume}$
 C) $0.5 \times \text{stress} \times \text{strain} \times \text{volume}$ D) $0.5 \times \text{stress} \times \text{strain}$

ANSWER KEY
PUDA: SDE(Civil/ Public Health)
21.11.2015 (EVENING)

Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.
1	C	31	C	61	D	91	C
2	D	32	D	62	C	92	B
3	C	33	B	63	C	93	C
4	B	34	A	64	A	94	B
5	A	35	B	65	A	95	A
6	A	36	C	66	C	96	A
7	C	37	D	67	B	97	C
8	A	38	D	68	A	98	A
9	C	39	B	69	A	99	A
10	A	40	A	70	A	100	C
11	D	41	D	71	B	101	C
12	D	42	B	72	C	102	D
13	A	43	B	73	B	103	A
14	B	44	C	74	D	104	C
15	B	45	A	75	A	105	C
16	B	46	D	76	D	106	A
17	A	47	B	77	C	107	B
18	B	48	A	78	A	108	B
19	C	49	D	79	A	109	D
20	D	50	B	80	A	110	C
21	C	51	D	81	D	111	C
22	B	52	B	82	D	112	C
23	D	53	C	83	D	113	C
24	C	54	D	84	A	114	B
25	C	55	B	85	D	115	C
26	D	56	A	86	A	116	B
27	A	57	A	87	B	117	C
28	B	58	C	88	A	118	B
29	D	59	B	89	C	119	A
30	A	60	A	90	B	120	C