

Question Booklet and Answer Key
For Recruitment Test Held on
21.11.2015 (Evening)
Post: SDE (ELECTRICAL)

1. ਜ਼ਖ਼ਮਾਂ ਤੇ..... ਮੁਹਾਵਰਾ ਪੂਰਾ ਕਰੋ:
 (A) ਮਲੂਮ 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) ਸੋਹਤ (B) ਸੋਅਤ (C) ਸਿਹਤ (D) ਸੋਹਤਿ
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 proposition 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
15. National Authority, Chemical Weapons Convention (NACWC) was setup on:
 A) 15 August 1990 B) 5 May 1997
 C) 24 September 1999 D) 27 October 1998

16. According to the Constitution of India, an Indian citizen is eligible to become the Governor of a State if she/he is:-
 A) above 30 years of age B) above 35 years of age
 C) above 40 years of age D) above 45 years of age
17. According to the statistics issued by the Govt. of India, India has the largest Postal Network in the world with:-
 A) 1,54,856 post offices B) 2,54,867 post offices
 C) 3,54,867 post offices D) 1,32,854 post offices
18. In terms of the commissioned ranks in the three Defence Services in India, the rank of Colonel (in Army) is equal to (in terms of ranks):
 A) Commander in Navy and Air Commodore in Air Force
 B) Captain in Navy and Group Captain in Air Force
 C) Commander in Navy and Wing Commander in Air Force
 D) Rear Admiral in Navy and Air Commodore in Air Force.
19. The University Grants Commission was established by the Government of India in the year:-
 A) 1967 B) 1953 C) 1956 D) 1958
20. Indian Council of Historical Research was established by the Government of India in:-
 A) 1950 B) 1952 C) 1968 D) 1972
21. The Chairman of the Seventh Central Pay Commission set up in 2014 is:-
 A) Mr. Ranjit Roy B) Mr Suresh Singh
 C) Justice Shri Ashok Kumar Mathur D) Shri Vivek Rae
22. The permanent Secretariat of the SAARC is located at:-
 A) Dhaka B) Kathmandu C) Karachi D) New Delhi
23. Which of the following poets wrote this famous line- "Our sweetest songs are those that tell of saddest thought":-
 A) John Keats B) William Wordsworth
 C) Lord Byron D) P.B. Shelley
24. The book "*India Wins Freedom*" was written by:-
 A) Dr. Rajendra Prasad B) Acharya Narendra Dev
 C) Abul Kalam Azad D) Dr Zakir Husain
25. The first Woman Nobel Prize Winner was:-
 A) Valentina Tereshkova B) Karoline Mikkelson
 C) Marie Curie D) Marma Estela 'Isabel'
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 uncles' 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) ZPDRL 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.

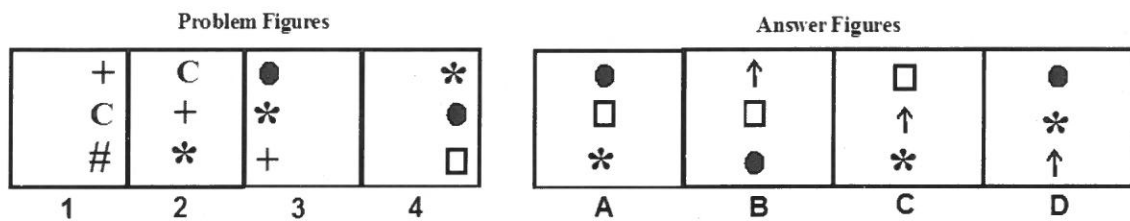
While travelling from one city to other, no intervening city should be visited more than once.

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

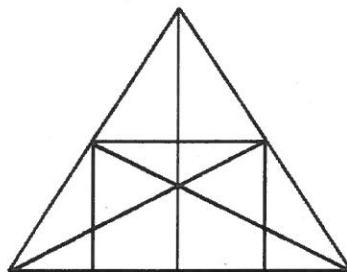
41. In a town 65% people watched the news on T.V., 40% read newspaper and 25% read newspaper as well as watched news on T.V. What is the percentage of people who neither watched T.V. nor read newspaper :
 A) 5 B) 10 C) 15 D) 20
42. Replace the questions (?)marks, from amongst the given alternatives :

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

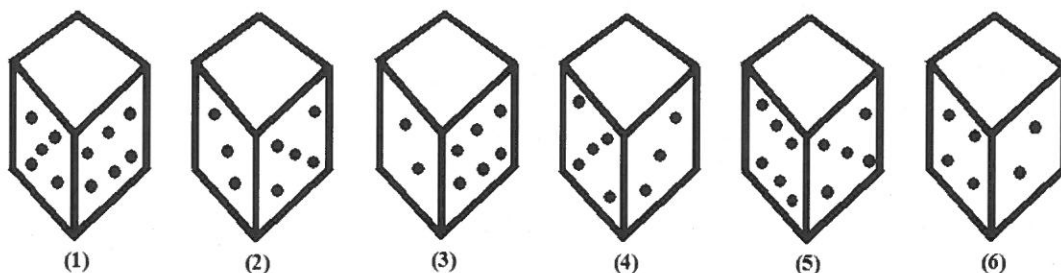
- A) 14, 21 B) 21, 14 C) 56, 84 D) 84, 56
43. Select the Figure amongst the Answer Figures, that will continue the series established by the four problem figures.



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 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) PY
 B) PZ
 C) YZ
 D) ZA
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. Which material has the least resistivity-
A) copper B) brass C) aluminium D) silver
62. Poorest conductor of electricity-
A) aluminium B) steel C) carbon D) silver
63. Which type of thermostat is generally used in appliances with heating elements-
A) bimetallic B) magnetic C) clad metal D) circuit breaker
64. When the potential difference across a parallel plate air capacitor is doubled, the electric field intensity between the plates
A) is not changed B) is halved C) is doubled D) None of the above
65. A step-up transformer increases
A) power B) current C) voltage D) frequencies
66. A parallel ac circuit in resonance will
A) have a high impedance B) act like a pure resistive circuit of low value
C) produce lot of noise D) generate lot of heat
67. The phenomenon of corona is generally accompanied by
A) a bang B) a hissing sound C) magnetic hum D) all of the above
68. Two resistances having values 50Ω and zero Ω are connected in parallel. Their combined value would be
A) $50\text{ k}\Omega$ B) $100\text{ k}\Omega$ C) $25\text{ k}\Omega$ D) zero $\text{k}\Omega$
69. The resistance of 100W, 200V lamp
A) 100Ω B) 200Ω C) 400Ω D) 1000Ω
70. Two aluminum conductors have equal length. The cross section area of one conductor is four times that of other. If the conductor having small cross section area has a resistance of 100Ω , the resistance of other conductor will be
A) 400Ω B) 100Ω C) 50Ω D) 25Ω
71. The fourth harmonic frequency of a wave form, whose fundamental frequency is 100 Hz, will be
A) 25 Hz B) 50 Hz C) 200 Hz D) 400 Hz
72. The range of an ac ammeter can be extended by using
A) induction coil B) current transformer
C) capacitor D) not possible

73. Instrument used for measurement of insulation resistance of a transformer winding is
 A) voltmeter and ammeter bridge B) wheat stone bridge
 C) post office resistance box D) megger
74. The scale of a permanent magnet moving coil voltmeter is
 A) non linear B) linear
 C) exponentially decreasing D) exponentially increasing
75. In a moving iron instrument the deflecting torque is proportional to
 A) current B) square of current
 C) square root of current D) inverse of current
76. A meter that is suitable for direct current only is
 A) electro-dynamometer type B) permanent magnet moving coil type
 C) hot wire type D) moving iron type
77. When alternating current passes through a conductor
 A) it remains uniformly distributed throughout the section of conductor
 B) portion of conductor near the surface carries more current as compared to the core
 C) portion of conductor near the surface carries less current as compared to the core
 D) entire current passes through the core of the conductor.
78. Skin effect depends on
 A) size of the conductor B) frequency of the current
 C) resistivity of the conductor material D) all of the above
79. The impurity in liquid dielectric which has significant effect in reducing the breakdown strength, is
 A) dust B) dissolved gases C) moisture D) ionic impurities.
80. Domestic supply of 220 V 50 Hz signifies that peak value of voltage waveform is
 A) 220 V B) 155 V C) 185 V D) 310 V
81. If d is the distance of a surface from a source, the illumination of the surface will vary as
 A) d B) $2d$ C) $1/d$ D) $1/d^2$
82. An astable multivibrator has
 A) no stable state B) one stable state
 C) three stable states D) two stable states
83. Which of the following is not a source of power
 A) solar cell B) photoelectric cell
 C) photovoltaic cell D) thermocouple
84. A fuse wire should have
 A) low specific resistance and low melting point
 B) low specific resistance and high melting point
 C) high specific resistance and high melting point
 D) high specific resistance and low melting point
85. Variable resistors are
 A) carbon resistors B) thin film resistors
 C) thick film resistors D) wire wound resistors
86. When two waves of same frequency and amplitude, with phase difference of 90° are fed to a CRO, the figure produced on the screen would be
 A) a straight line B) an ellipse C) a cycloid D) a circle
87. By applying negative feedback to amplifier stage
 A) its gain is increased B) its gain is decreased
 C) its distortion is decreased D) its noise is increased

88. The efficiency of a transformer is usually
A) 50% B) 70% C) 80% D) 98%
89. A 2000/200V, 20 kVA transformer has 60 turns in secondary. The number of primary turns will be
A) 6 B) 60 C) 600 D) 1200
90. If the full rating of a transformer is 320 kW and power factor is 0.8, the kVA rating of the transformer will be
A) 256 kVA B) 320 kVA C) 400 kVA D) 500 kVA
91. A power supply gives no load dc voltage as 12V, which drops to 9 volts when put on load. The percentage regulation is
A) 25% B) 33% C) 67% D) 75%
92. The time base signal of CRO is a
A) triangular wave form B) variable frequency saw tooth wave
C) sinusoidal signal D) depends on the application
93. Which of the following is usually not the generating voltage ?
A) 6.6 kV B) 9.9 kV C) 11kV D) 13.2 kV
94. Which of the following is not the distribution system normally used
A) 3 phase-4 wire B) 3 phase-3 wire
C) single phase - 3 wire D) single phase -4 wire
95. In aluminium conductors steel reinforced, the insulation between aluminium and steel conductors is
A) any insulator B) bitumen C) insulin D) no insulation is required
96. Three DC currents I_1 , I_2 and I_3 meet at a node with I_1 entering and I_2 and I_3 leaving the node. I_1 and I_2 are measured as 100mA and 99 mA with a $\pm 1\%$ accuracy. Then the value of I_3 and the accuracy of I_3 are
A) 1mA $\pm 20\%$ B) 199mA $\pm 2\%$ C) 1mA $\pm 2\%$ D) 1mA $\pm 199\%$
97. For a first order system a 5% settling time is equal to
A) three times the time constant B) two times the time constant
C) the time constant D) depends on the situation
98. The output voltage waveform of a square wave inverter contains
A) only even harmonics B) both even and odd harmonics
C) only odd harmonics D) None of the above
99. In dc generators, the effect of armature reaction on the main pole flux is to
A) reduce it B) distort it C) reverse it D) both (A) & (B)
100. The voltage of a single solar cell is
A) 0.5 v B) 1 v C) 1.1 v D) 5 w
101. The total power of a wind stream is proportional to
A) velocity of stream B) (velocity of stream)²
C) (velocity of stream)³ D) 1/ (velocity of stream)
102. Under no load conditions the current in a transmission line is due to
A) corona effects B) capacitance of the line
C) back flow from earth D) spinning reserve
103. The inverse Laplace transform of $\frac{2}{s+1}$ is
A) 2(t+1) B) $2e^{-t}$ C) $2e^t$ D) e^{-2t}

104. In a PID controller, the values of proportional, integral and derivative are dependent on
 A) future, past and present errors respectively
 B) present, past and future errors respectively
 C) past, present and future errors respectively
 D) present, future and past errors respectively
105. If the transfer function of a system is $\frac{1}{Ts+1}$, the steady state error to unit step input is
 A) T B) zero C) infinite D) none of these
106. For the equation $s^3+2s^2+4s+3=0$, the number of roots in the right half of s- plane will be
 A) 0 B) 1 C) 2 D) 3
107. Out of the following circuit breakers, which one has the lowest voltage range ?
 A) Air-break circuit breaker B) Air-blast circuit breaker
 C) Tank type oil circuit breaker D) SF₆ circuit breaker
108. Lead network is used to improve
 A) improve transient response B) both (A) and (C)
 C) increase bandwidth D) improve steady state response
109. In control system integrator is represented by
 A) $1/s^2$ B) s^2 C) $1/s$ D) s
110. In a two watt meter method the reading of W1 = 3 kW and W2 = 2 kW. But W2 reading was taken after reversing the current coil of the wattmeter. The net power in the circuit is
 A) 3 kW B) 5 kW C) 1 kW D) 6 kW
111. If the actual speed of induction motor is equal to synchronous speed, the torque developed will be
 A) zero B) normal torque of finite value
 C) normal torque/ slip D) infinite
112. Open circuit test on transformer is conducted to measure
 A) copper loss B) core loss
 C) insulation resistance D) eddy current loss
113. A series motor is never started without some mechanical load on it because
 A) at no load a series motor develops infinite speed
 B) at no load, losses in a series motor are high
 C) load on a motor acts as a brake
 D) at no load motor gives vicious sparking
114. In a transformer, copper losses at half load will be
 A) same as full load copper loss
 B) half of full load copper loss
 C) one fourth of full load copper loss
 D) one eighth of full load copper loss
115. As a result of armature reaction, the reduction in the mutual air gap flux in dc generator is approximately
 A) 5% B) 25% C) 50% D) 60%
116. A 100kW, 3 phase, 440 V, 60 Hz induction motor has a speed of 1140 rpm on full load. If the m/c has 6 poles, the slip of m/c will be
 A) 0.05 B) 0.10 C) 0.20 D) 60

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ANSWER KEY
PUDA: SDE (ELECTRICAL)
21.11.2015 (EVENING)

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