QUESTION BOOKLET AND ANSWER KEY
FOR RECRUITMENT TEST OF
Statistical Analyst
Code 9.5
HELD ON 9.12.2011

1. 'ਸੋਹਲੇ ਗਾਉਣਾ' ਮੁਹਾਵਰੇ ਦਾ ਅਰਥ ਹੈ :
   (A) ਉੱਚੀ ਬੋਲਣਾ   (B) ਸਿੱਢਤਾ ਕਰਨੀਆਂ   (C) ਨਿੰਦਿਆ ਕਰਨੀ   (D) ਖ਼ੁਸ਼ੀ ਦੇ ਗੀਤ ਗਾਉਂਣੇ

2. 'ਵਿਸਮਿਕ' ਵਾਕ ਹੁੰਦੇ ਹਨ :
   (A) ਜਿਹੜੇ ਉਦਾਸੀ, ਖ਼ੁਸ਼ੀ ਦੇ ਭਾਵਾਂ ਨੂੰ ਪ੍ਰਗਟ ਕਰਨ
   (B) ਜਿਹੜੇ ਉਦਾਸੀ, ਖ਼ੁਸ਼ੀ, ਗਮੀ, ਹੈਰਾਨੀ ਅਤੇ ਚਿੰਤਾ ਦੇ ਭਾਵ ਪ੍ਰਗਟ ਕਰਨ
   (C) ਜਿਹੜੇ ਕੇਵਲ ਖ਼ੁਸ਼ੀ ਦਾ ਸੰਕੇਤ ਕਰਨ
   (D) ਜਿਹੜੇ ਕੇਵਲ ਉਦਾਸੀ ਦੇ ਹੀ ਭਾਵ ਵਿਅਕਤ ਕਰਨ

3. ਪੰਜਾਬੀ ਧੁਨੀਆਂ ਨੂੰ ਕਿੰਨੇ ਪ੍ਰਕਾਰ ਨਾਲ ਵੰਡਿਆ ਜਾਂਦਾ ਹੈ :
   (A) ਤਿੰਨ   (B) ਚਾਰ   (C) ਦੋ   (D) ਪੰਜ

4. 'ਪ੍ਰਆਧੀ' ਕੀ ਹੈ ?
   (A) ਭਾਸ਼ਾ   (B) ਖੇਤਰ   (C) ਵਿਆਕਰਨ   (D) ਉਪ-ਭਾਸ਼ਾ

5. ਪੰਜਾਬੀ ਵਿਆਕਰਨ ਅਨੁਸਾਰ 'ਕਿਉਂਕਿ' ਸ਼ਬਦ ਕੀ ਹੈ ?
   (A) ਯੋਜਕ   (B) ਸੰਬੰਧਕ   (C) ਧਾਤੂ   (D) ਪੜਨਾਂਵ

Directions Q.No. 6-8:-
Choose the correct synonym of the given word out of the four choices:
6. **Grudge**
   A) Grievance   B) Greed   C) Gratitude   D) Gravity

7. **Impervious**
   A) Relevant   B) Invulnerable to   C) Impertinent   D) Permeable

8. **Imperious**
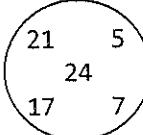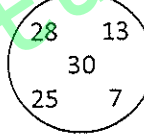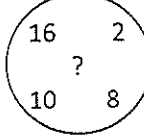   A) Unaffected   B) Unhealthy   C) Commanding   D) Weak

Directions Q.No. 9-10:-
Choose the correct opposite of the given word out of the four choices:
9. **Impugn**
   A) Reject   B) Select   C) Indict   D) Support

10. **Impunity**
    A) Responsibility   B) Support   C) Correctness   D) Impudence

11. Which part of the Ashoka's pillar at Sarnath has been taken for National Emblem of India?
    A) central portion   B) bottom portion   C) capital   D) complete pillar

12. India became _____ country to have acquired nuclear powered submarines.
    A) sixth   B) fifth   C) fourth   D) third

13. Match the following:
    1. FDI   a. N.K. Singh
    2. Venture capital   b. Chandra Shekhar
    3. Disinvestment   c. Tarapore
    4. Capital Account convertibility   d. G.V. Rama Krishna
    A) 1d, 2b, 3a, 4c   B) 1a, 2c, 3d, 4b   C) 1d, 2c, 3a, 4c   D) 1a, 2b, 3d, 4c

14. While determining literacy rate, the age taken into account is
A) + 1 years B) + 5 years C) + 6 years D) + 7 years

15. Which of the following states is on the south-west of Punjab?
A) Haryana B) Rajasthan C) Himachal Pradesh D) J and K

16. Which one of the following statements is correct about Punjab?
A) Punjab has 85% of its area under cultivation and 2.6% of cropped area of whole country
B) Punjab has 51% of its area under cultivation and 2.6% of cropped area of whole country
C) Punjab has 70% of its area under cultivation and 1.6% of cropped area of whole country
D) Punjab has 85% of its area under cultivation and 1.6% of cropped area of whole country

17. Which three of the following rivers do not flow through Punjab?
A) Satluj, Chenab, Jhelum B) Chenab, Jhelum, Ravi
C) Beas, Ravi, Jhelum D) Chenab, Ravi, Satluj

18. An ad-valorem duty is tax basis of
A) price of commodity B) value added
C) Unit of commodity D) advertisement expenses

19. Which of the following does not have a common boundary with Bangladesh?
A) Meghalaya B) Mizoram C) Tripura D) Arunachal Pradesh

20. The first nuclear reactor of India is named
A) Urvashi B) Apsara C) Kamini D) Rohini

21. D. Udaya Kumar who designed symbol for Indian Rupee is
A) IIT post-graduate B) IIT drop out
C) Diploma holder in designing from polytechnic D) MBA

22. First Woman to climb Mount Everest is
A) Santosh Yadav B) Dina Vakel C) Bachchendri Pal D) Anna Chandi

23. How many members can the President of India nominate to Rajya Sabha?
A) 2 B) 10 C) 12 D) 8

24. After retirement a judge can undertake private practice of law
A) in the same court B) only in a lower court
C) where ever he/she wished D) in another court of the same level or higher court

25. Who was Indian leader who opposed organisation of Indian National Congress in 1885 along with Raja Shiva Prasad of Benaras?
A) Sayyid Ahmed Khan B) Badrudin Tyabji
C) Nawab Abdul Latif D) Mohammad Ali Jinnah

26. The doctrine of Swadeshi was first preached _____ and to _____
A) In 1866 ; save Indian economy
B) In 1866 ; generate feeling of patriotism
C) In 1870 ; protect Indian industries against slaught of British Manufacturers
D) In 1876 ; create feeling of Indianization.

27. In which city did representatives from the countries of the world meet and create the first international agreement on global warming?
A) Rio de Janeiro, Brazil   B) Paris, France
C) Kyoto, Japan   D) Kuala Lampur, Malaysia

28. Match the following:

I	II
1. Malaria	a. Bone Marrow
2. Filaria	b. Brain
3. Encephalitis	c. Blood Cell
4. Leukemia	d. Lymph node

A) 1c, 2d, 3b, 4a   B) 1c, 2d, 3a, 4b   C) 1c, 2b, 3d, 4a   D) 1a, 2b, 3c, 4d

29. The Earth is third planet from the Sun and is located between
A) Venus and Mars   B) Mars and Jupiter
C) Venus and Jupiter   D) Mercury and Venus

30. 'Boston Tea Party' is associated with the
A) French Revolution   B) Russian Revolution
C) American Independence   D) Independence of Egypt

31. On the basis of following statement, which assumptions are implicit.
Statement: "I want to present a book on techniques of yoga to Ajay on his birthday," said A.
Assumptions: i) A will be invited by Ajay on his birthday
ii) The person to whom the book is to be presented, is not keeping good health
iii) Book is an acceptable gift for birthday
A) all are implicit   B) only i and ii are implicit
C) only ii and iii are implicit   D) only i and iii are implicit

32. Which number in the third set will replace the question mark

A) 24   B) 30   C) 36   D) 40

33. In a group of persons travelling in a bus, 6 persons can speak French, 15 can speak Spanish and 6 can speak English. In that group none can speak any other language. If 2 persons in the group can speak two languages and one person can speak all the three languages, then how many persons are there in the group
A) 21   B) 22   C) 23   D) 24

Directions: on the basis of following informations, find the correct conclusions in Q. No. 34-35.
'X $ Y' means 'X' is not greater than 'Y'
' X # Y'means 'X' is neither greater than nor smaller than 'Y'
'X %Y' means 'X' is not smaller than 'Y'
'X * Y' means 'X' is neither smaller than nor equal to 'Y'
'X@Y' means 'X' is neither greater than nor equal to 'Y'

34. Statements: D $ K, H * B, K @ H
    Conclusions: I B % K   II B @K   III H * D
    A) Only I and II are true   B) only I and III are true
    C) all I, II and III are true   D) none of these is true

35. Statements: F # M, M * J, P % F
    Conclusions: I P * J   II P % J   III P # M
    A) only I is true   B) only I and II are true
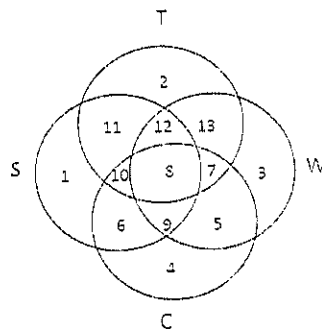   C) only I and III are true   D) one of these is true

36. A monkey climbs 30 feet at the beginning of each hour and rests for a while when he slips back 20 feet before he again starts climbing at the beginning of next hour. If he begins his ascent at 8 a.m., at what time will he first touch flat at 120 feet high from the ground.
    A) 4 p.m.   B) 5 p.m.   C) 6 p.m.   D) none of these

37. In a row of 40 boys, Satish was shifted 10 places to the right of Rohan and Kewal was shifted 10 places to the left of Vilas. If Vilas was 26th from left and there were three boys between Kewal and Satish after shifting, what was the position of Rohan in the row?
    A) 10th from the right end   B) 10th from the left end
    C) 39th from the right end   D) data inadequate

Directions: On the basis of following digit-letter-symbol sequence, answer Q.Nos. 38-39.
    R * T J L 2 $ D = M # 8 C % B < K 1 + A W ? P E ÷ Q @ 7 F 6

38. Which of the following is 6th to the left of 18th element from the left end?
    A) %   B) C   C) 1   D) 8

39. If the first fifteen elements in the above sequence are written in reverse order, then which of the following will be 21st from the right end?
    A) 2   B) $ C) =   D) L

40. If you pick up from English alphabets, the 6th and 14th letters from right end and then pick up 5th and 20th letters from the left end and form a meaningful word. What is the 1st letter of that word?
    A) E   B) M
    C) no word can be formed   D) more than one word can be formed

Study the following diagram and answer Q.Nos. 41-43

i) Circle S stands for households having scooter
ii) Circle T stands for households having a TV set
iii) Circle W stands for households having a washing machine
iv) circle C stands for households having a Car

41. Households having scooter, T.V. set and washing machine and not car are represented by the region
A) 4   B) 7   C) 11   D)12

42. Households having T.V. Set but neither scooter nor washing machine are given by the region
A) 2   B) 11   C) 12   D) 13

43. Household having a car, washing machine, TV set but not a scooter are represented by the region
A) 8   B) 9   C) 7   D) none of these

44. A person starts from a point A and travels eastwards to B and then turns left and travels thrice that distance to reach C. He again turns left and travels five times the distance he covered between A and B and reaches his destination D. The shortest distance between the starting point and the destination is
A) $\sqrt{306}$ Km   B) 15 Km   C) 12 Km   D) 18 Km

On the basis of following informations, answer Q. Nos. 45-46:
Six persons A, B, C, D, E and F were playing a game. A's father, mother and uncle were in the group. There were two women. B, the mother of A, got more points than her husband. D got more points than E but less than F. Niece of E got the lowest points. Father of A got more points than F but could not win the game?

45. Who won the game?
A) A   B) B   C) D   D) F

46. Who is husband of B?
A) C   B) D   C) E   D) F

47. If 'A $ B' means 'A' is brother of 'B', 'A @ B' means 'A' is wife of 'B', 'A # B' means 'A' is daughter of 'B' and 'A θ B' means 'A' is father of 'B', then which of the following expressions indicates the relationship 'K' is father-in-law of H?
A) H @ J $ L # P θ K   B) H @ J $ P θ L # K
C) H @ P $ J θ L # K   D) H @ J $ L # K θ P

48. Rewrite the word VOCALIST in the numeric form by writing its first four letter in the reverse order and then next four letters in the reverse by substituting I by 8, 0 by 1, L by 3, T by 2, V by 5, S by 7, A by 9, and C by 6.
A) 96152783   B) 92156873   C) 96157683   D) 92156783

49. Find the odd number out
(i) 15   (ii) 63   (iii) 143   (iv) 195   (v) 257
A) (i)   B) (v)   C) (iii)   D) (iv)

50. Complete the following series
2 3 B – 6 –FG-5D - 8 - H I
A) C, 7, 4, E, 9   B) D, 8, 6, C, 7   C) E, 8, 7, 8, 9   D) W, 8, 7, I, L

51. A bus maintains an average speed of 60 km/hr while going from P to Q and maintains an average speed of 90 km/hr while coming back from Q to P. The average speed of the bus is
A) 75 km/hr   B) 72 km/hr   C) 70 km/hr   D) 30 km/hr

52. A bag contains 11 white balls and some red balls. If the probability of drawing a red ball is double that of a white ball, then the number of red balls in the bag are
A) 18   B) 20   C) 22   D) 24

53. In a Binomial distribution, the mean is 9 and variance is 6. The value of n and p, respectively are
A) 27; $\frac{1}{3}$ B) 81; $\frac{1}{9}$ C) 36; $\frac{1}{4}$ D) 18; $\frac{1}{2}$

54. Let X and Y are two independent standard normal variables. Then the distribution of the X/Y is
A) Standard Normal   B) Beta   C) Cauchy   D) Uniform

55. Let X_1, X_2 and X_3 be three random variables such that $Corr(X_1, X_2) = Corr(X_1, X_3) = Corr(X_2, X_3) = \rho\,(\neq 1)$. Then, the square of multiple correlation coefficient, $R^2_{1(23)}$ is

A) $\dfrac{\rho^2}{1+\rho}$ B) $\dfrac{1+2\rho^2}{1+\rho}$ C) $\dfrac{2\rho^2}{1+\rho^2}$ D) $\dfrac{2\rho^2}{1+\rho}$

56. Let X be a standard Normal random variable, then the distribution of $X^2/2$ is
A) Normal   B) Gamma   C) Poisson   D) Beta of 1st kind

57. Let X be a random variable having Uniform distribution over $(0,1)$. Then, the distribution of -2 logX is
A) Chi-square   B) Uniform   C) F distribution   D) t distribution

58. Let X_1 and X_2 be two independent Poisson random variables with parameters λ_1 and λ_2, respectively. Then the conditional distribution of X given X+Y is
A) Binomial   B) Poisson   C) Negative Binomial   D) Hypergeometric

59. Let X be a continuous random variable with probability density function, $f(x) = 3x^2, -1 \leq x \leq 0$. If 'b' is a number satisfying -1 < b < 0, then $P[X > b \mid X < b/2]$ is

A) $8\,b^3/9$ B) $7\,b^2/(b^2+1)$ C) $-7\,b^3/(b^3+8)$ D) $-8\,b^3/9$

60. In a trivariate distribution it is found that $Corr(X_1, X_2) = 0.8$, $Corr(X_1,X_3) = 0.6$ and $Corr(X_2, X_3) = 0.5$. Then, partial correlation coefficient, $r_{13.2}$ is

A) 0.910   B) 0.385   C) 0.526   D) 0.739

61. Let X be a continuous random variable with mean 2 and variance 9. Then $P\{|X - 2| \geq 6\}$ is
A) Bounded above by $\frac{1}{4}$ B) Bounded below by 1/4
C) Bounded above by $\frac{1}{2}$ D) Bounded below by $\frac{1}{2}$

62. Let X_1, X_2 and X_3 are independent and identically distributed random variables having Geometric distribution. Then the distribution of their sum is
A) Uniform   B) Poisson   C) Negative Binomial   D) Geometric

63. Let e_{YX} and r_{YX} denote respectively the correlation ratio and Karl Pearson correlation coefficient between variables Y and X. Then which of the following holds in general

A) $e^2_{YX} \geq r^2_{YX}$ B) $e^2_{YX} \approx r^2_{YX}$ C) $e^2_{YX} = r^2_{YX}$ D) $e^2_{YX} \leq r^2_{YX}$

64. Let a random variable X has F-distribution with degrees of freedom n_1 and n_2. Then, distribution of the random variable 1/X is
A) F-distribution with degrees of freedom n_2 and n_1
B) F-distribution with degrees of freedom $1/n_1$ and $1/n_2$
C) Gamma distribution with parameters n_1 and n_2
D) Gamma distribution with parameters $1/n_1$ and $1/n_2$

65. Let X be a standard Normal random variable and Y is a Chi-square random variable with 3 degrees of freedom. Assuming that random variables X and Y are independently distributed, then distribution of $X / \sqrt{Y/3}$ is
A) Chi-square distribution   B) Cauchy distribution
C) t distribution   D) Normal distribution

66. Let X be a random variable having Normal distribution with mean 2 and variance 9. Then the distribution of $\left(\dfrac{X-2}{3}\right)^2$ is

A) Chi-square distribution   B) F distribution
C) t distribution   D) Normal distribution

67. In bivariate regression, mean of the predicted values of variable of variable y is
A) Different from the mean of observed values of variable y
B) Same as the mean of observed values of variable y
C) May or not be same as the mean of observed values of variable y
D) 0

68. Let $Y = \dfrac{X}{2} + 2$ and $X = \dfrac{Y}{8} - 1$ are regression lines of Y on X, and X on Y, respectively. Then correlation coefficient between X and Y is
A) ¼   B) - ¼   C) ± ¼   D) ½

69. Number of total samples of size n which can be drawn from a population of size N under simple random sampling with replacement is

A) n/N   B) N^n C) n^N D) $\binom{N}{n}$

70. A necessary condition for a symmetrical BIBD, assuming the number of treatments as even, is that $(r - \lambda)$ must be
A) Perfect Square   B) Infinite   C) Positive Integer   D) Negative Integer

71. For Binomial distribution random variable (X), n=10 and p=0.6, then $E(X^2)$ is

    A) 32.4   B) 34.4   C) 36.4   D) 38.4

72. In 3^3 design the error degrees of freedom with 5 replicates are
    A) 108   B) 106   C) 104   D) 102

73. In Rao-Blackwell theorem which concept of the following is used to obtain an unbiased estimator
    A) Efficiency   B) Sufficiency   C) Consistency   D) Completeness

74. A statistical test is said to be unbiased if for that test
    A) Power + Size > 0   B) Power + Size < 0   C) Power < Size   D) Power > Size

75. In a two way analysis of variance with 4 treatments, 5 blocks and 3 observations per cell, the error degrees of freedom are
    A) 38   B) 39   C) 40   D) 41

76. Stratification is carried out when
    A) the population is too large   B) the population is heterogeneous
    C) budget is limited   D) the population is homogeneous

77. A random sample of size 5 is taken from a uniform distribution over (0,1). Then the expected of the 3rd order statistics is
    A) 1/2   B) 1/3   C) 1/4   D) 1/6

78. For a random variable X which has the probability function, $f(x) = \dfrac{k}{x!}, x = 0,1,2,...,$ the value of constant k is
    A) e   B) 1/e   C) e + 1   D) e - 1

79. Let two random variables X and Y jointly have bivariate normal distribution, then the conditional distribution of Y given X is
    A) Normal   B) Cauchy   C) Gamma   D) Chi-square

80. An analogous parametric test for the Mood's test based on two independent samples is
    A) t-test   B) F-test   C) Chi-square test   D) Z-test

81. The coefficient of variation of Poisson distribution with mean 4 is
    A) 1/4   B) 1/2   C) 4   D) 1

82. The moment generating function of a chi-square distribution (say $M_X(t)$) with 2 degrees of freedom is

    A) $(1-t)$ B) $(1-2t)$ C) $(1-t)^{-1}$ D) $(1-2t)^{-1}$

83. For a Normal underlying population, the ARE of Mann-Whitney U-test relative to two-sample t-test is
    A) 0.555   B) 0.655   C) 0.955   D) 1.000

84. Acceptance sampling is technique generally used for
    A) Process control
    B) Product control
    C) Both process and product control
    D) none of the above

85. Let f be a measurable function defined over a measurable ser E. Then the function $-f$ is
    A) Measurable
    B) May or may not be measurable
    C) Measurable if function f vanishes nowhere on E
    D) Outer measurable

86. When the Karl Pearson coefficient of correlation between X and Y is zero, then the two regression lines
    A) Coincide
    B) Become perpendicular
    C) Cut each other at an angle of 45 degrees
    D) Become parallel

87. Latin square design is an incomplete
    A) 2-way layout   B) 3-way layout   C) 4-way layout   D) 5-way layout

88. The number of basic feasible solution(s) for a linear programming problem with the set of constraints as $2x_1 + 3x_2 + x_3 = 7$ and $x_1 - x_2 + 3x_3 = 6$ (with $x_1 \geq 0$, $x_2 \geq 0$, $x_3 \geq 0$) is
    A) 0   B) 1   C) 2   D) 3

89. The variance of Bernoulli distribution is
    A) p^2 B) $p(1-p)$ C) $(1-p)^2$ D) $p/(1-p)$

90. For M/M/1 queuing model with traffic intensity less than unity, steady state probability distribution of the queuing time is
    A) Normal   B) Exponential   C) Binomial   D) Geometric

91. Which is the type of memory for information that does not change on your computer?
    A) RAM   B) ROM   C) ERAM   D) RW / RAM

92. CD-ROM stands for
    A) Compactable Read Only Memory
    B) Compact Data Read Only Memory
    C) Compactable Disk Read Only Memory
    D) Compact Disk Read Only Memory

93. Which operation is not performed by computer?
    A) Inputting   B) Processing   C) Controlling   D) Understanding

94. Which of the following are the two main components of the CPU?
    A) Control Unit and Registers
    B) Registers and Main Memory
    C) Control unit and ALU
    D) ALU and bus

95. Which statement is valid?
    A) 1KB = 1024 bytes
    B) 1 MB= 4048 bytes
    C) 1 MB = 1000 kilobytes
    D) 1 KB = 1000 bytes

96. A digital computer did not score over an analog computer in terms of
   A) Speed   B) Accuracy   C) Cost   D) Memory

97. Which of the following is the correct syntax for URL?
   A) john@xyz.com   B) C:\Windows   C) index.html   D) aol.com

98. Which of the following applications is not included in OFFICE Package?
   A) Access   B) Excel   C) Word Perfect   D) Power Point

99. Which of the printers used in conjunction with computers uses dry ink powder?
   A) Daisy wheel printer   B) Line printer
   C) Laser printer   D) Thermal printer

100. A computer program that converts an entire program into machine language at one time is called a/an
    A) Interpreter   B) CPU   C) Compiler   D) Simulator

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Key 9.5							
Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.
1	B	26	C	51	B	76	B
2	B	27	A	52	C	77	A
3	C	28	A	53	A	78	B
4	D	29	A	54	C	79	A
5	A	30	C	55	D	80	B
6	A	31	D	56	B	81	B
7	B	32	B	57	A	82	D
8	C	33	C	58	A	83	C
9	D	34	D	59	C	84	B
10	A	35	A	60	B	85	A
11	C	36	C	61	A	86	B
12	A	37	D	62	C	87	B
13	D	38	D	63	A	88	C
14	D	39	A	64	A	89	B
15	B	40	B	65	C	90	D
16	A	41	D	66	A	91	B
17	B	42	A	67	B	92	D
18	A	43	C	68	A	93	D
19	D	44	B	69	B	94	C
20	B	45	B	70	A	95	A
21	A	46	A	71	D	96	B
22	C	47	D	72	C	97	D
23	C	48	A	73	B	98	C
24	D	49	B	74	D	99	C
25	A	50	A	75	C	100	C