Sr No.	PhD Statistics
1	In the series 357,363,369,……. What will be the 10th term?
Alt1	405
Alt2	411
Alt3	413
Alt4	417

2	Choose word from the given options which bears the same relationship to the third word, as the first two bears: Moon: Satellite :: Earth : ?
Alt1	Sun
Alt2	Planet
Alt3	Solar System
Alt4	Asteroid

3	Door is related to Bang in the same way as Chain is related to ……..?......
Alt1	Thunder
Alt2	Clinch
Alt3	Tinkle
Alt4	Clank

4	Select the lettered pair that has the same relationship as the original pair of words: Emollient: Soothe
Alt1	Dynamo: Generate
Alt2	Elevation: Level
Alt3	Hurricane: Track
Alt4	Precipitation: Fall

5	Which of the following is the same as Count, List, Weight?
Alt1	Compare
Alt2	Sequence
Alt3	Number
Alt4	Measure

6	Spot the defective segment from the following:
Alt1	The downtrodden
Alt2	needs
Alt3	to be uplifted
Alt4	on a war footing

7	Choose the meaning of the idiom/phrase from among the options given: A close shave
Alt1	a nice glance
Alt2	a narrow escape
Alt3	an intimate
Alt4	a triviality

8	Lightning ------- in the same place twice.
Alt1	doesn’t hit
Alt2	never strikes
Alt3	never attacks
Alt4	never falls

9	Choose the option closest in meaning to the given word: FLIPPANT
Alt1	serious
Alt2	unsteady
Alt3	irreverent
Alt4	caustic

10	Choose the antonymous option you consider the best: OBSOLETE
Alt1	obscure
Alt2	hackneyed
Alt3	current
Alt4	grasp

11	Akash scored 73 marks in subject A. He scored 56% marks in subject B and X marks in subject C. Maximum marks in each subject were 150. The overall percentage marks obtained by Akash in sall te three subjects were 54%. How many marks did he score in subject C ?
Alt1	84
Alt2	86
Alt3	79
Alt4	73

12	A person starts from his house and travels 6 Km towards the West, he then travelled 4 Km towards his left and then travels 8 Km towards west and 3 Km towards South. Finally he turns right and travels 5 Km. What is the horizontal distance he has travelled from his house ?
Alt1	7 Km
Alt2	15 Km
Alt3	23 Km
Alt4	19 Km

13	If 1st Jan 2012 is a Tuesday then on which day of the week will 1st Jan 2013 fall ?
Alt1	Wednesday
Alt2	Thursday
Alt3	Friday
Alt4	Saturday

14	One morning after sunrise, Reeta and Kavita were talking to each other face to face at University. If Kavita’ shadow was exactly to the right of Reeta, which direction was Kavita facing ?
Alt1	North
Alt2	South
Alt3	East

Alt4	West

15	In an exam every candidate took History (or)Geography(or)both. 74.8%took History and 50.2% took Geography. If the Total number of candidates is 1500,how many took History and Geography both?
Alt1	400
Alt2	350
Alt3	750
Alt4	375

16	Which word includes the larger % of Vowels?
Alt1	GOOGLE
Alt2	AMAZON
Alt3	FACE BOOK
Alt4	DOE

17	A= Least prime >24; B=Greatest prime <28; Then
Alt1	A>B
Alt2	A<B
Alt3	A=B
Alt4	None

18	CL X VIII refers
Alt1	861
Alt2	701
Alt3	168
Alt4	107

19	Which of the following is larger than 3/5 ?
Alt1	1/2
Alt2	39/50
Alt3	7/25
Alt4	59/100

20	Mr. Babu travelled 1200 km by air which formed 2/5 of his trip. One third of the whole trip, he travelled by car and the rest of the journey was by train. What was the distance travelled by train?
Alt1	600km
Alt2	700 km
Alt3	800 km
Alt4	900 km

21	If we have a sample of size n from a population of N units, the finite population correction is (a) $\frac{N-1}{N}$ (b) $\frac{n-1}{N}$ (c) $\frac{N-n}{N}$ (d) $\frac{N-n}{n}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

22	Under the proportional allocation, the size of the sample from each stratum is inversely proportional to A: total sample size B: size of the stratum C: population size D: population mean
Alt1	A
Alt2	B
Alt3	C
Alt4	D

23	Which of the following basis distinguishes cluster sampling from stratified sampling? (i) Clusters are preferably heterogeneous whereas strata are taken as homogeneous as possible (ii) A sample is always drawn from each stratum whereas no sample of elementary units is drawn from clusters (iii) Small size clusters are better whereas there is no such restriction for stratum size A: (i) & (ii) are True, but (iii) is False B: (i) & (iii) are True, but (ii) is False C: (i) is True, but (ii) & (iii) is False D: (i), (ii) & (iii) are True

Alt1	A
Alt2	B
Alt3	C
Alt4	D

24	Classification is applicable in case of (i) Quantitative characters (ii) Qualitative characters A: Both (i) & (ii) are True B: Both (i) & (ii) are False C: (i) is True, (ii) is False D: (i) is False, (ii) is True
Alt1	A
Alt2	B
Alt3	C
Alt4	D

25	A semi-logarithmic graph of a series increasing by a constant amount will be (a) a straight line at angle of 45° (b) a convex upward curve (c) a concave upward curve (d) a convex downward curve
Alt1	A
Alt2	B
Alt3	C
Alt4	D

26	The estimate of β in the regression equation $Y = \alpha + \beta X + e$ by the method of least squares is (a) biased (b) unbiased (c) consistent (d) efficient

Alt1	A
Alt2	B
Alt3	C
Alt4	D

27	Given $r_{12} = 0.6$, $r_{13} = 0.5$ and $r_{23} = 0.8$, the value of $r_{12.3}$ is (a) 0.4 (b) 0.72 (c) 0.38 (d) 0.47
Alt1	A
Alt2	B
Alt3	C
Alt4	D

28	Let the equations of the regression lines be expressed as $2X - 3Y = 0$ and $4Y - 5X = 8$. Then the correlation between X and Y is (a) $\sqrt{\frac{15}{8}}$ (b) $\sqrt{\frac{8}{15}}$ (c) $\sqrt{\frac{6}{15}}$ (d) $\sqrt{\frac{1}{15}}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

29	The test statistic for testing $H_0 : \rho = \rho_0$ with usual notations is (a) $Z = \frac{Z_r - Z_{\rho 0}}{1/(n-3)}$ (b) $Z = \frac{Z_r - Z_0}{1/(n-3)}$ (c) $Z = \frac{Z_r - Z_{\rho 0}}{1/\sqrt{(n-3)}}$ (d) none of the above
Alt1	A
Alt2	B
Alt3	C
Alt4	D

30	If there are k groups and each group consists on n observations, the limits of intraclass correlation are (a) 0 to 1 (b) $\frac{1}{n-1}$ to 1 (c) $-\frac{1}{n-1}$ to 1 (d) -1 to 1
Alt1	A
Alt2	B
Alt3	C
Alt4	D

31	Comment on an Array of void data type (a) it can store any data type (b) it only stores element of similar data type to first element (c) it acquires the data type with the highest precision in it (d) you cannot have an array of void data type
Alt1	A
Alt2	B
Alt3	C
Alt4	D

32	The elements in the array of the following code are int array[5]={5} (a) 5, 5, 5, 5, 5 (b) 5, 0, 0, 0, 0 (c) 5, (garbage), (garbage), (garbage), (garbage) (d) (garbage), (garbage), (garbage), (garbage), 5
Alt1	A
Alt2	B
Alt3	C
Alt4	D

33	Which of the following compute proportions from a contingency table? (a) par() (b) prop.table() (c) anova() (d) all of the above
Alt1	A
Alt2	B
Alt3	C
Alt4	D

34	Which of the following evaluate the Normal probability density (with a given mean/SD) at a point? (a) dnorm (b) rnorm (c) pnorm (d) rpois
Alt1	A
Alt2	B
Alt3	C
Alt4	D

35	Consider the problem of testing $H_0 : \theta = 0$ against $H_1 : \theta = \frac{1}{2}$ based on a single observation X from $U(\theta, \theta+1)$ population. The power of the test "Reject H_0 if $X > \frac{2}{3}$" is (a) $\frac{1}{6}$ (b) $\frac{5}{6}$ (c) $\frac{1}{3}$ (d) $\frac{2}{3}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

36	Let $X_1, X_2, \ldots X_n$ be a random sample from a $Gamma(\alpha, \beta)$ population, where $\beta > 0$ is a known constant. The rejection region of the most powerful test for $H_0 : \alpha = 1$ against $H_1 : \alpha = 2$ is of the form (a) $\prod_{i=1}^{n} X_i > K$ (b) $\sum_{i=1}^{n} X_i > K$ (c) $\prod_{i=1}^{n} X_i < K$ (d) $\sum_{i=1}^{n} X_i < K$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

37	Suppose person A and person B draw random sample of sizes 15 and 20 respectively from $N(\mu, \sigma^2)$ for testing $H_0 : \mu = 2$ against $H_1 : \mu > 2$. In both the cases the observed sample mean and sample variances are same with the values $\overline{x_1} = \overline{x_2} = 1.8$, $s_1 = s_2 = s$. Both of them use usual t-test and state the p-values as p_A and p_B. Then which of the following is correct? (a) $p_A > p_B$ (b) $p_A = p_B$ (c) $p_A < p_B$ (d) can not infer anything
Alt1	A
Alt2	B
Alt3	C
Alt4	D

38	Let X be a single observation from a population having an exponential distribution with mean $\frac{1}{\lambda}$. Consider the problem of testing $H_0 : \lambda = 2$ against $H_1 : \lambda = 4$. For the test with rejection region $X \geq 3$, let α and β denote the probabilities of Type-I and Type-II error respectively. Then (a) $\alpha = e^{-6}$ and $\beta = 1 - e^{-12}$ (b) $\alpha = e^{-12}$ and $\beta = 1 - e^{-6}$ (c) $\alpha = 1 - e^{-12}$ and $\beta = e^{-6}$ (d) $\alpha = e^{-6}$ and $\beta = e^{-12}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

39	The standard chi-squared test for a 2 by 2 contingency table is valid only if A: all the expected frequencies are greater than five B: both variables are continuous C: at least one variable is from a Normal distribution D: all the frequencies total will be less than five

Alt1	A
Alt2	B
Alt3	C
Alt4	D

40	If n_1 and n_2 are large in Mann-Whitney test, the variable U is distributed with variance equal to (a) $\frac{n_1 n_2(n_1+n_2+1)}{12}$ (b) $\frac{n_1 n_2(n_1+n_2-1)}{12}$ (c) $\frac{n_1 n_2(n_1+n_2)}{12}$ (d) $\frac{n_1 n_2(n_1 n_2+1)}{12}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

41	Let X be a discrete random variable with moment generating function $M_X(t) = e^{0.5(e^t-1)}, t \in \Re$. Then $P(X \leq 1)$ equals (a) $e^{-\frac{1}{2}}$ (b) $\frac{3}{2}e^{-\frac{1}{2}}$ (c) $\frac{1}{2}e^{-\frac{1}{2}}$ (d) $e^{-\frac{(e-1)}{2}}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

42	Let E and F be two independent events with $P(E \mid F) + P(F \mid E) = 1, P(E \cap F) = \frac{2}{9}$ and $P(F) < P(E)$. Then $P(E)$ equals (a) $\frac{1}{3}$ (b) $\frac{1}{2}$ (c) $\frac{2}{3}$ (d) $\frac{3}{4}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

43	X and Y be two independent random variables with $X \sim U(0,2)$ and $Y \sim U(1,3)$. Then $P(X < Y)$ equals (a) $\frac{1}{2}$ (b) $\frac{3}{4}$ (c) $\frac{7}{8}$ (d) 1
Alt1	A
Alt2	B
Alt3	C
Alt4	D

44	The probability mass function of a random variable X is given by $P(X = x) = k\begin{pmatrix} n \\ x \end{pmatrix}, x = 0, 1, \ldots n$, where k is a constant. The moment generating function $M_X(t)$ is (a) $\frac{(1+e^t)^n}{2^n}$ (b) $\frac{2^n}{(1+e^t)^n}$ (c) $\frac{1}{2^n(1+e^t)^n}$ (d) $2^n(1+e^t)^n$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

45	Let the probability density function of a random variable X be given by $f(x) = \alpha e^{-x^2-\beta x}, -\infty < x < \infty$. If $E(X) = -\frac{1}{2}$, then (a) $\alpha = \frac{1}{\sqrt{\pi}}e^{-\frac{1}{4}}; \beta = 1$ (b) $\alpha = \frac{1}{\sqrt{\pi}}e^{-\frac{1}{4}}; \beta = -1$ (c) $\alpha = \sqrt{\pi}e^{-\frac{1}{4}}; \beta = 1$ (d) $\alpha = \sqrt{\pi}e^{-\frac{1}{4}}; \beta = -1$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

46	Let $X_1, X_2, \ldots X_n$ be a random sample from a population with the probability density function $f_\theta(x) = 4e^{-4(x-\theta)}, x > \theta, \theta \in \Re$. If $T_n = \min(X_1, X_2, \ldots X_n)$, then (a) T_n is unbiased and consistent estimator of θ (b) T_n is biased and consistent estimator of θ (c) T_n is biased but not consistent estimator of θ (d) T_n is neither unbiased nor consistent estimator of θ.
Alt1	A
Alt2	B
Alt3	C
Alt4	D

47	Let $X_1, X_2, \ldots X_n (n > 1)$ be a random sample from a Poisson (θ) population, $\theta > 0$ and $T = \sum_{i=1}^{n} X_i$. Then the UMVUE of θ^2 is (a) $\frac{T(T-1)}{n^2}$ (b) $\frac{T(T-1)}{n(n-1)}$ (c) $\frac{T(T-1)}{n(n+1)}$ (d) $\frac{T^2}{n^2}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

48	Let $\underline{X} = (X_1, X_2)$ have a bivariate normal distribution with $E(X_1) = E(X_2) = 0; E({X_1}^2) = E({X_2}^2) = 1$ and $E(X_1X_2) = \frac{1}{2}$. Then $P(X_1 + 2X_2 > \sqrt{7})$ equals (a) 0.1587 (b) 0.5 (c) 0.7612 (d) 0.8413
Alt1	A
Alt2	B
Alt3	C
Alt4	D

49	The pdf of a random variable X is given by $f(x) = \alpha x^{\alpha-1}, 0 < x < 1, \alpha > 0$. Then the distribution of the random variable $Y = \ln X^{-2\alpha}$ is (a) ${\chi_2}^2$ (b) $\frac{1}{2}{\chi_2}^2$ (c) $2{\chi_2}^2$ (d) ${\chi_1}^2$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

50	From the data on marks it is observed that only 25% students got marks less than or equal to 35, 50% students got marks upto 50, but only 25% got marks above 75. Then the marks distribution should be (a) symmetric (b) negatively skewed (c) positively skewed (d) information is insufficient.
Alt1	A
Alt2	B

Alt3	C
Alt4	D

51	If the two regression lines between the variables X and Y are perpendicular to each other, then their correlation coefficient is (a) -1 (b) i (c) 0 (d) 1
Alt1	A
Alt2	B
Alt3	C
Alt4	D

52	If the regression line of Y on X is $Y = 23 - 2X$ and the coefficient of determination is 0.49, then the correlation coefficient is (a) -0.7 (b) -0.49 (c) 0.49 (d) 0.7
Alt1	A
Alt2	B
Alt3	C
Alt4	D

53	Let X be a random variable whose probability mass functions $f_0(x)$ (under the null hypothesis H_0) and $f_1(x)$ (under the alternative hypothesis) are given by $X=x$: 0, 1, 2, 3 $f_0(x)$: 0.4, 0.3, 0.2, 0.1 $f_1(x)$: 0.1, 0.2, 0.3, 0.4 For testing the null hypothesis $H_0 : X \sim f_0$ against the alternative $H_1 : X \sim f_1$, consider the test given by: Reject H_0 if $X > \frac{3}{2}$. If $\alpha =$ size of the test and $\beta =$ power of the test, then (a) $\alpha = 0.3; \beta = 0.3$ (b) $\alpha = 0.3; \beta = 0.7$ (c) $\alpha = 0.7; \beta = 0.3$ (d) $\alpha = 0.7; \beta = 0.7$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

54	Let X ~ N (0, 1), then the distribution of X^2 is A: Cauchy B: Normal C: t D: Chi-Square
Alt1	A
Alt2	B
Alt3	C
Alt4	D

55	Suppose that $\begin{pmatrix} X_1 \\ X_2 \end{pmatrix}$ has normal with $(\mu_{2\times1}, \Sigma_{2\times2})$ distribution where $\Sigma_{2\times2}$ is nonsingular. Let $X_3 = -2X_2$. Then which of the following has a singular normal distribution. (a) $\begin{pmatrix} X_1 - 2X_2 \\ X_2 - 2X_3 \end{pmatrix}$ (b) $\begin{pmatrix} X_1 - X_2 - X_3 \\ 2X_1 + 2X_2 \end{pmatrix}$ (c) $\begin{pmatrix} X_1 + X_2 \\ 2X_1 + 2X_3 \end{pmatrix}$ (d) $\begin{pmatrix} X_1 + X_2 + X_3 \\ X_1 + X_2 \end{pmatrix}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

56	Let $\overline{X}$ and S be the sample mean vector and sample variance covariance matrix for a random sample of size N drwan from $N_p(\mu, \Sigma), \Sigma > 0$. Then a Hotelling T^2 statistic may be constructed as (a) $(N-1)(\overline{X}-\mu)'S^{-1}(\overline{X}-\mu)$ (b) $N(\overline{X}-\mu)'S^{-1}(\overline{X}-\mu)$ (c) $\frac{1}{N-1}(\overline{X}-\mu)'S^{-1}(\overline{X}-\mu)$ (d) $\frac{1}{N}(\overline{X}-\mu)'S^{-1}(\overline{X}-\mu)$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

57	$\mathbf{A} \sim Wishart_p(n, I_p)$ and $\mathbf{Y}$ is a p-component random vebctor. Then $\frac{\mathbf{Y}'\mathbf{Y}}{\mathbf{Y}'\mathbf{A}^{-1}\mathbf{Y}}$ follows (a) $\chi^2(n-p+1)$ (b) $\frac{p}{n-p+1}F_{p,n-p+1}$ (c) $Beta\left(\frac{n-p+1}{2}, \frac{p}{2}\right)$ (d) None of the above
Alt1	A
Alt2	B
Alt3	C
Alt4	D

58	Principal Component Analysis aims at deriving a new set of linearly combined measurements possessing the following properties. Detect which one does **not** hold. (a) Their loading vectors are normalized each. (b) Their loading vectors are orthogonal to each other. (c) Their variances are in a nondecreasing order. (d) Their covariances are negative.
Alt1	A
Alt2	B
Alt3	C
Alt4	D

59	If X and Y are two random variables, then
Alt1	E{(XY)2} = E(X2) E(Y2)
Alt2	E{(XY)2} = E(X2Y2)
Alt3	E{(XY)2} ≥ E(X2) E(Y2)
Alt4	E{(XY)2} ≤ E(X2) E(Y2)

60	If X~b (n, p) then Y = (n-X) is
Alt1	b (2n, p)
Alt2	b (n, 1-p)
Alt3	b (n, p)
Alt4	b (2n, 1-p)

61	In SRSWOR, the probability that a specified unit is selected at the second draw from a population of size N is

Alt1	$\frac{1}{N}$
Alt2	$\frac{1}{N}$
Alt3	$\frac{1}{N-2}$
Alt4	$\frac{1}{\{N(N-1)\}}$

62	T1 and T2 are two most efficient estimators with the same variance S2 and the correlation between them is ρ, the variance of (T1 + T2)/2 is equal to
Alt1	S2
Alt2	ρ S2
Alt3	(1+ρ)S2/4
Alt4	(1+ρ)S2/2

63	For the distribution f(x; θ)= 1/θ ; 0≤x≤θ. A sufficient estimator for θ, based on a sample X1, X2, …, Xn is
Alt1	$\frac{\sum_{i=1}^{n} X_i}{n}$
Alt2	$\frac{\sum_{i=1}^{n} X_i}{n}$
Alt3	Max (X1, X2, …, Xn)
Alt4	Min (X1, X2, …, Xn)

64	If the sample size is large in Wilcoxon's Signed rank test, the statistic T* is distributed with variance
Alt1	n(n-1)(2n-1)/24
Alt2	n(n+1)(2n+1)/24
Alt3	n(2n+1)/12
Alt4	n(n-1)(2n+1)/12

65	In a (23, 22) experiment with 3 replications, the interaction ABC is confounded. The error degrees of freedom in the analysis of variance will be
Alt1	16
Alt2	14

Alt3	12
Alt4	10

66	The total number of Latin squares that can be obtained of order are
Alt1	16
Alt2	12
Alt3	9
Alt4	3

67	Let S~Wp (K, Σ), be a p-variate Wishart distribution. For p=1, W1(K, σ2) follows
Alt1	χ_k^2 distribution
Alt2	〖(σ^2 χ)〗_k^2 distribution
Alt3	Snedecor's F-distribution with 1, p degrees of freedom
Alt4	Non-central χ_k^2 distribution

68	The regression line of Y on X is Y = 0.95X + 7.25 and $\bar{Y}$ = 13.14, the value of $\bar{X}$ is
Alt1	5.9
Alt2	6.2
Alt3	12.5
Alt4	21.5

69	On the basis of one observation drawn from a distribution with probability density function as f(x; θ)=θ exp (-θx), if 0 ≤ x ≤ ∞. The critical region defined by x ≥ 1 for testing H0: θ=1 against H1: θ=2. The probability of type II error, β, is given by
Alt1	$\int_1^\infty \exp(-x)\,dx$
Alt2	$\int_1^\infty 2\exp(-2x)\,dx$
Alt3	$\int_0^1 \exp(-x)\,dx$
Alt4	$\int_0^1 2\exp(-2x)\,dx$

70	If X~N(0,1) and Y~N(5,4) are two independent random variables, then the variance of the random variable Z = 2X + Y is
Alt1	4
Alt2	6
Alt3	8
Alt4	9

71	A random sample of five observations (3.5, 0.6, 2.7, 0.9, 1.8) drawn from a population with probability density function as f(x)= 1/(b-a) ,a<x<b. Then the maximum likelihood estimates of a and b are
Alt1	(0.6, 3.5)
Alt2	(0.6, 0.9)
Alt3	(1.9, 3.5)
Alt4	(2.7, 3.5)

72	Suppose that u~Np (μ, Σ), where μ and Σ are unknown. For testing the null hypothesis H0: μ = μ0 (specified) against H1: μ ≠ μ0, the test statistic used is
Alt1	Student’s t
Alt2	Hotelling T2
Alt3	Mahalanobis D
Alt4	x^2

73	. Let S1~ Wp (k1, Σ) and S2~Wp (k2, Σ) be independent, where Wp denotes a wishart distribution. Then the distribution of S1 + S2 is
Alt1	Wp (K1+K2, Σ)
Alt2	Wp (K1+K2, 2Σ)
Alt3	W2p (K1+K2, Σ)
Alt4	The distribution cannot be defined

74	Let X~N3 (μ, Σ) with μ’ = [-3, 1, 4] and Σ= [■(1&-2&0@-2&5&0@0&0&2)] which of the following random variables are independent?
Alt1	X1 and X2
Alt2	(X1, X2) and X3
Alt3	(X2, X3) and X1
Alt4	X2 and X3

75	If in a Latin square design with “t” treatments, such that row degrees of freedom = column degrees of freedom = treatment degrees of freedom = error degrees of freedom, then t is equal to
Alt1	3
Alt2	8
Alt3	9
Alt4	16

76	In a (35, 32) experiment the total number of interactions that can be confounded are
Alt1	3

Alt2	10
Alt3	13
Alt4	26

77	If a stratified random sample of size 45 is to be selected by Neyman allocation from a population with N1=150, N2=350, S_1^2=4,S_2^2=9, then the number of units to be selected from the first stratum is
Alt1	10
Alt2	20
Alt3	25
Alt4	35

78	In simple random sampling, the bias of the ratio estimator $\hat{R} = \bar{Y}/\bar{X}$ is given by
Alt1	$\frac{\text{cor}(\bar{Y}, \bar{X})}{E(\bar{X})}$
Alt2	$-\frac{\text{cor}(\hat{R}, \bar{X})}{E(\bar{X})}$
Alt3	$\frac{\text{cor}(\hat{R}, \bar{Y})}{E(\bar{X})}$
Alt4	$-\frac{\text{cor}(\bar{Y}, \bar{X})}{E(\bar{X})}$

79	The family of parametric distribution which has mean always less than variance
Alt1	Beta distribution
Alt2	Log normal distribution
Alt3	Weibull distribution
Alt4	Negative binomial distribution

80	Kruskal wallis test with the k treatment and n blocks, which is approximated to chi-square with degrees of freedom equal to
Alt1	n-1
Alt2	n-k
Alt3	k-1
Alt4	(n-1) (k-1)

81	Let X be a random variable with mean μ and variance σ2, the lower bound to P[|X- μ|≤4σ] is
Alt1	0.0625
Alt2	0.9375
Alt3	1
Alt4	0.2500

82	If (4.5, 7, 2.3, 3, 8, 7.4, 2, 5) is a random sample of size 8 from a population with probability density function as $f(x,\theta)= 1/2\ e^{(-\lvert X-\theta \rvert)}$; $-\infty<X<\infty$, then the maximum likelihood estimate of $\hat{\theta}$ is
Alt1	4.50
Alt2	4.75
Alt3	8.00
Alt4	4.90

83	Let X1, X2, ..., Xn be independently and identically distributed random variables with common Uniform distribution U(0,1). Then the distribution of $-2\sum_{(i=1)}^{n} \log X_i$ is
Alt1	$\chi^2_{(2n)}$
Alt2	$\chi^2_{(n)}$
Alt3	t_{2n-1}
Alt4	$F_{n,n}$

84	Let x1, x2, ..., x25 be a random sample of size n from N(μ, σ2) and n is large. The relative efficiency of the sample median as compared to sample mean is
Alt1	3/π
Alt2	2/π2
Alt3	1/π
Alt4	2/π

85	If all frequencies of classes are same, the value of χ^2 is
Alt1	1
Alt2	Zero
Alt3	∞
Alt4	None of the above

86	The probability mass function of a random variable X is x : -1 0 1 p(x) : k 2k 2k. The value of k is
Alt1	1/10
Alt2	1/5
Alt3	1/2
Alt4	1/3

87	While performing analysis of variance, if 10 is added to each of the observation, then the various sum of squares
Alt1	Increased by 10
Alt2	Decreased by 10
Alt3	Remains the same

Alt4	Multiplied by 10

88	In a spit plot design, more precision is attained for
Alt1	Main plot treatments
Alt2	Sub plot treatments
Alt3	Block differences
Alt4	All of the above

89	In simple random sampling with replacement, the same sample sampling unit may be included in the sample
Alt1	Only once
Alt2	Only twice
Alt3	More than once
Alt4	None of the above

90	Let X and Y are two independent random variables and follow the Poisson distribution with means $\lambda 1$ and $\lambda 2$ respectively, where $\lambda 1 \neq \lambda 2$. Then the conditional distribution of [X/X+Y] is
Alt1	Binomial
Alt2	Poisson
Alt3	Discrete Uniform
Alt4	Negative Binomial

91	Let p be the probability that a coin will fall head in a single toss in order to test the hypothesis H0: p = ½ against H1: p = 3/4. The coin is tossed five times and H0; is rejected if more than three heads are obtained. The probability of type I error is
Alt1	3/16
Alt2	47/128
Alt3	81/128
Alt4	13/16

92	From a population of size 5, the total number of possible sample of size 3 using simple random sample with replacement is
Alt1	15
Alt2	60
Alt3	250
Alt4	125

93	The difference in the mortality experiences of two communities can be done by comparing the values of
Alt1	Crude death rate
Alt2	Age specific death rate
Alt3	Standardised death rate
Alt4	Infant mortality rate

94	If Y = 3.2X +58 and X = 0.2Y – 8 are the lines of regression of Y on X and X on Y respectively, then the value of correlation coefficient between X and Y is
Alt1	0.6

Alt2	0.7
Alt3	0.8
Alt4	0.9

95	In 1993, the sex ratio at birth was 105 males to 100 females in India. Total fertility rate was 3.54. The value of Gross reproduction rate is approximately
Alt1	1.73
Alt2	1.81
Alt3	3.37
Alt4	3.85

96	Homogeneity of several variances can be tested by
Alt1	Bartlett's test
Alt2	Fisher's exact test
Alt3	F test
Alt4	t test

97	Generally the estimators obtained by the method of moments as compared to ML estimators are
Alt1	Less efficient
Alt2	More efficient
Alt3	Equally efficient
Alt4	None of the above

98	In 2n factorial experiment conducted in RBD with r replications the error degrees of freedom would be
Alt1	(2n-1) (r-1)
Alt2	2n (r-1)
Alt3	(2n-1 -1) (r-1)
Alt4	(2n-1) (2n-2)

99	The additivity of analysis of variance model is tested by
Alt1	Wilk's λ criterion
Alt2	Tukey's test
Alt3	Fisher's test
Alt4	Duncanr's test

100	In a 25 factorial experiment the number of 3 factor interactions are
Alt1	10
Alt2	20
Alt3	5
Alt4	32