Msc: in statistics and compution
code No. (501)

Set No. 1

00025

Question Booklet No.

17P/297/17(i)

(To be filled up by the candidate by blue/black ball-point pen)

Roll No. | | | | | | | | | | |

Serial No. of OMR Answer Sheet ..... 2017 206.

Day and Date .....

..... (Signature of Invigilator)

INSTRUCTIONS TO CANDIDATES

(Use only ***blue/black ball-point pen*** in the space above and on both sides of the **Answer Sheet**)

1. Within 30 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing. In case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall ***except the Admit Card without its envelope.***
3. ***A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.***
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. ***On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.***
6. ***No overwriting is allowed in the entries of Roll No., Question Booklet no. and Set no. (if any) on OMR sheet and Roll No. and OMR sheet no. on the Question Booklet.***
7. ***Any change in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfairmeans.***
8. ***Each question in this Booklet is followed by four alternative answers. For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet.***
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).*
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit only **OMR *Answer Sheet*** at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

Total No. of Printed Pages : 48

[उपर्युक्त निर्देश हिन्दी में अन्तिम आवरण पृष्ठ पर दिये गए हैं।]

183.

SEAL

ROUGH WORK
रफ़ कार्य

Msc. in Statistics and computation
code No(501)
2017

17P/297/17(i)

No. of Questions : 120

Time : 2 Hours ***Full Marks : 360***

Note : (1) Attempt as many questions as you can. Each question carries **3 (Three)** marks. ***One mark will be deducted for each incorrect answer.*** **Zero** mark will be awarded for each unattempted question.

(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

01. Two suppliers offer a machine part with the required 1" diameter. Supplier A's product has a mean 1.2" and standard deviation of 0.24", whereas supplier B's product has mean 0.9" and standard deviation of 0.18".

Assertion (A) : The quality of the products of supplier A and supplier B are same.

Reason (R) : The value of coefficient of variation for the product of both is 20%. Choose your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is true but R is false

(4) A is false but R is true

02. Let us define a new statistic as the distance between 70th sample percentile and 30th sample percentile. This new statistic would give us information concerning :

(1) central tendency.
(2) Dispersion
(3) Skewness
(4) Kurtosis

03. A frequency distribution is bell shaped. Keeping the total number of observations same, if the equal frequency at both the tails are increased, then the standard deviation shall :

(1) Decrease
(2) Increase
(3) Remain constant
(4) Nothing definite can be said unless exact data is given

04. A reading test with 50 possible point yields a bell-shaped distribution with scores ranging from 5 to 48 on a large sample of third graders. If the same test were administred to fifth graders, what would we expect the form of the frequency distribution to be ?

(1) Negatively skewed
(2) Symmetric and bell-shaped
(3) Symmetric, but not bell- shaped
(4) Positively skewed

05. A percentile score of 40 indicates that a person :

(1) answered 40% of the questions correctly on the test
(2) knows 40% of the material covered by the examination
(3) has earned a score equal to or better than 40 persons in his class
(4) has earned a score equal to or better than 40% of the persons in his class

06. Consider the following distribution :

class interval	f	Cum f	Cum %
75-83	5	200	100.0
66-74	12	195	97.5
57-65	15	183	91.5
48-56	38	168	84.0
39-47	60	130	65.0
30-38	40	90	35.0
21-29	13	30	15.0
12-20	10	17	8.5
3-11	7	7	3.5

The frequency of 38 in the interval 48-56 means :

(1) 38 frequencies are at the upper real limit of the interval.

(2) 38 frequencies are at the lower real limit of the interval.

(3) 38 frequencies are spread out throughout the interval.

(4) 38 frequencies are at the upper apparent limit of the interval.

07. Frequency distributions are useful for All BUT which of the following objectives ?

(1) Investigation of characteristics of each observation.

(2) Summarization of data.

(3) Condensation of large sets into smaller sets.

(4) Illustration of the amount of variability in data.

08. A graphical presentation may accomplish ALL BUT which of the following objectives ?

(1) Illustrate the amount of variation in the data

(2) Illustrate approximately where the mean is

(3) Allow comparison with similar data

(4) Will have the exact same shape regardless of what units are used on the axes.

09. Mr. X *wants to* purchase a car but he is confused to choose the one. The probabilities that he will go for the category B or category C cars are respectively 0.54 and 0.46. If he selects category B cars, he will buy either Palio or Indica with respective probabilities 0.48 and 0.52. On the other hand if he goes for category C, the probalities of buying Accent is 0.59 and that of Ikon is 0.41. In the light of the above information, which car *do you think* Mr. X is most likely to purchase ?

(1) Palio (2) Indica

(3) Accent (4) Ikon

10. An unbiased coin is tossed until a head is obtained or the total number of tosses is 7. It is desired to calculate probability of the event E that coin is tossed at lest three times. In this context read the following carefully :

(i) The total number of mutaually exclusive and equally likely outcomes is 8.

(ii) The number of favourable outcomes to event E is 3.

(iii) Probability of E is 3/8

Choose the correct answer from the following :

(1) (i) is true but (ii) and (iii) are false

(2) (i) is false but (ii) and (iii) are true

(3) All are true

(4) All are false

11. In tossing of a four times, the events E_1 and E_2 are mutually exclusive if :

(1) E_1 : Getting at least two heads and E_2 : Getting at most two tails.

(2) E_1 : Getting at least two heads and E_2 : Getting at least two tails.

(3) E_1 : Getting at least three heads and E_2 : Getting at most three tails.

(4) E_1 : Getting at least three heads and E_2 : Getting at least three tails.

12. In a multiple choice test having m choices in each question, an examinee either knows the answer with probability p or guesses with probability (1-p). The probability of answering the question correctly is 1, if he knows the answer and 1/m, if he guesses. If an examinee answers a question correctly, the probability that he really knew the answer is :

(1) $mp/(1+mp)$ (2) $(m-1)p/(1+mp)$

(3) $mp/(1+(m-1)P)$ (4) $(m-1)p/(1+(m-1)p)$

13. Which of the following is always true ?

(1) If a random variable X has no moments, its moment generating function will never exist.

(2) If a random variable X has all or some of the moments, even then its moments generating function may not exist except only at one point

(3) If a random variable X has all or some of the moments and moment generating function exists, it will always generate those moments which exists

(4) If a random variable X has all the moment, its moment generating function $M_X(t)$ exist always exists for all real t such that $|t| \leq t_0$ (some real positive number)

14. Which of the following CANNOT be probability generating function ?

(1) $s^{-3}(2-s)^{-1}$ (2) $(1-s^{10})/10(1-s)$

(3) $s/(2+s)$ (4) $4^{-n}(1+3s)^n$

15. The joint probability mass function of random variables X and Y

$$f(x,y) = \frac{\lambda^x e^{-x} p^y (1-p)^{x-y}}{y!(x-y)!}; y = 0, 1, \ldots\ldots\ldots x, y = 0, 1\ldots\ldots$$

The marginal distribution of :

(1) X and Y both are Poisson

(2) X and Y both are binomial

(3) X is binomial and that of Y is Poisson

(4) X is Poisson and that of Y is binomial

16. The joint probability density function of (X,Y) is $f(x,y) = \exp\{-(x+y)\}$, for $0 < x < \infty$ and $0 < y < \infty$.

Statement S : X and Y are independently distributed.

Statement P : $P(x < Y \mid X < 2Y) = P(X < Y)$.

Choose your answer from the following codes :

(1) Both S and P are true

(2) S is true but P is false

(3) S is false but P is true

(4) Both S and P are false

17. If random variable X has Beta type I distribution $\beta_1(a,b)$ then the distribution of random variable Y = 1 -X will be :

(1) $\beta_1(1,b)$ (2) $\beta_1(b,a)$

(3) $\beta_2(a,b)$ (4) $\beta_2(b,a)$

18. Read the following statements carefully in context of the function given below :

$\varphi(t) = 1-|t|$, if $|t| \leq 1$

$= 0$, if $|t| > 1$

Assertion (A) : $\varphi(t)$ cannot be characteristics function of any random variable.

Reason (R) : $\varphi(t)$ is not continuous function of t.

Select your answer from the following **codes** ;

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) Both A and R is false

(4) A is true but R is false

19. Mean is always less than variance for :

(1) Negative Binomial distribution only

(2) Geometirc disribution only

(3) Negative Binomial distribution and Geometric distribution both

(4) Neither Negative Binomial distribution nor Geometric distribution

20. The t-distribution with one degree of freedom is :

(1) Cauchy's distribution

(2) Beta distribution of first kind

(3) Beta distribution of second kind

(4) Normal distribution

21. The joint distribution of X and Y is $f_{xy}(x,y) = [n!/\{x!\ y!\ (n-x-y)!\}]\ p^x q^y\ (1-p-q)^{n-x-y}$ for $x, y = 0, 1, 2, \ldots\ldots n$; $x + y \leq n$; $0 \leq p, q \leq 1$ and $p + q < 1$. Read the following statements carefully :

Assertion (A) : X and Y are binomially distributed with parameter (n,p) and (n,q) respectively

Reason (R) : X and Y are dependent having non-linerar regressions.

Select your answer from the following codes ;

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) Both A and R is false

(4) A is true but R is false

22. The probability density function of X is :

$$f(x) = \frac{1}{\pi(1+x^2)};\ -\infty < x < \infty$$

Then, the distribution of X^2 would be

(1) N (0, 1) distribution

(2) t- distribution

(3) x^2 distribution

(4) F - distribution

23. For normal distribution with mean 10 and standard deviation 15, the ratio of mean deviation, standard deviation and quartile deviation would be :

(1) 10 : 12 : 15

(2) 10 : 15 : 12

(3) 12 : 15 : 10

(4) 12 : 10 : 15

24. X and Y has the joint probability density function f(x,y). The marginal distribution g(x) of X and h(y) of Y are normal. The covariance between X and Y is zero. Then,

(1) f(x,y) must be bivariate normal and should be equal to g(x) h (y)

(2) f(x,y) must be bivariate normal but may not be equal to g(x)h(y)

(3) f(x,y) may not be bivariate normal but should be equal to g(x) h (y)

(4) f(x,y) may not be bivariate normal and may not be equal to g(x) h (y)

25. X and Y are independent random variables such that X is normally distributed with mean zero and variance σ^2 and Y takes values + 1 or - 1 with equal probability. The distribution of S = XY + X/Y is :

(1) Normal with mean zero and variance σ^2

(2) Normal with mean zero and variance $2\sigma^2$

(3) Normal with mean zero and variance $4\sigma^2$

(4) Not normal distribution but mixture of normal distributions

26. X is a binomial variable with parameter (n,p) and F is F-statistic with (2k, 2(n-k+1)) degrees of freedom. Then :

(1) $P(x \leq k-1) = P(F > (n - k + 1)\, p/k\,(1 - p))$

(2) $P(x \leq k-1) = P(F \leq (n - k + 1)\, p/k\,(1 - p))$

(3) $P(x \leq p-1) = P(F \geq (n - p + 1)\, k/p\,(1 - k))$

(4) $P(x \leq p-1) = P(F \leq (n - p + 1)\, k/p\,(1 - k))$

27. Which of the following is true relation between Pearson's β_1 and β_2 coefficients ?

(1) $\beta_2 \geq \beta_1 - 1$ (2) $\beta_2 \geq \beta_1 + 1$

(3) $\beta_1 \geq \beta_2 - 1$ (4) $\beta_1 \geq \beta_2 + 1$

28. A cyclist pedals from his house to his college (which is 7 kms. Away from his house) at a speed of 10 kilometers per hour and returns back from the college to his house at 15 kilometers per hour. His average speed is :

(1) 12.5 (2) 12 (3) 13 (4) 11

29. In a frequency table, the upper boundary of each class is k times of the lower boundary. X_i and f_i are the midpoint and corresponding frequency of the ith (i = 1, 2, ... m) class. N is the sum of all the frequencies. Then which of the following statements is/are true ?

Statement S: $x_2 = x_1 k^1$

Statement P : Geometric mean of the data is exp(log x_1 $+ \frac{\log k}{N} \sum_{i=1}^{M} i f_i$)

Choose your answer from the following codes :

(1) Both S and P are true (2) S is true but P is false

(3) S is false but P is true (4) Both S and P are false

30. We have a data set consisting of 40 observations where an observation can be either 5 or 10. Which of the following statements are true ?

S1 : The mean and median for the data will be same iff the variance for the data is zero.

S2 : The mean and median for the data will always differ if the range for the data is 5.

Select the correct answer from the following codes :

(1) Both S_1 and S_2 are true (2) S_1 is true but S_2 false

(3) S_1 is false but S_2 is true (4) Both S_1 and S_2 are false

31. Under usual notations, it is given that $r_{12} = r_{13} = r_{23} = \rho$, then

(1) $R_{1.23} = \rho$ and $r_{12.3} = \rho$.

(2) $R_{1.23} = \rho\sqrt{2}/\sqrt{(1+\rho)}$ and $r_{12.3} = \rho\sqrt{2}/\sqrt{(1+\rho)}$

(3) $R_{1.23} = \rho\sqrt{2}/\sqrt{(1+\rho)}$ and $r_{12.3} = \rho/(1+\rho)$

(4) $R_{1.23} = \rho/(1+\rho)$ and $r_{12.3} = \rho\sqrt{2}/\sqrt{(1+\rho)}$

32. Assertion(A) : The range of multiple correlation coefficient is $[-1, +1]$.

Reason (R) : Multiple correlation coefficient is simple correlation coefficient (having range $[-1, +1]$) between observed values of a variable and its estimated values calculated from a linear relation of the variable with rest of the variables determined by least square method.

Select your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is false but R is true

(4) A is true but R is false

33. X is normally distributed with mean zero and variance σ^2 and Y independently follows exponential distributon with mean $2\sigma^2$. We wish to test $H_0 : \sigma^2 \leq 1$ against $H_1 : \sigma^2 > 1$ at α percent level of significance. The uniformly most powerful (UMP) test :

(1) does not exist
(2) is a chis-quare test.
(3) is a t-test
(4) is a F-test

34. Let L denote the likelihood function and T be an unbiased estimator of $g(\theta)$. Then for $K(\theta) > 0$ T attains the minimum variance bound if :

(1) $L = K(\theta)(T - g(\theta))$
(2) $\log L = K(\theta)(T - g(\theta))$
(3) $\frac{d}{d\theta}\log L = K(\theta)(T - g(\theta))$
(4) $\frac{d^2}{d\theta^2}\log L = K(\theta)(T - g(\theta))$

35. If $x_{(1)} < x_{(2)} < .. < x_{(n)}$ be ordered observations from the following density function :

$$f(x, \theta) = \frac{1}{2}\theta - 1 < x < \theta + 1$$

The maximum likelihood estimate of θ

(1) is $x_{(1)}$ only
(2) is $x_{(n)}$ only
(3) All values greater than $x_{(1)} + 1$ but less than $x_{(n)} - 1$
(4) All values greater than $x_{(n)} - 1$ but less than $x_{(1)} + 1$

36. Let $x_1, x_2 \ldots\ldots x_n$ be iid B (1, θ) random variables, $0 < \theta < 1$. Then, the estimator of θ : $T(x) = \dfrac{n\bar{x} + \frac{\sqrt{n}}{2}}{n+\sqrt{n}}$ is :

(1) Both unbiased and consistent

(2) Unbiased but NOT consistent

(3) Consistent but NOT unbiased

(4) Neither unbiased nor consistent

37. In sample from the population with pdf :

$$f(x,\theta) = \frac{1}{\pi[1+(x-\theta)^2]} \quad -\infty < x, \theta < \infty$$

The Cramer Rao lower bound for an unbiased estimator of θ is:

(1) $\frac{n}{2}$ (2) $\frac{2}{n}$ (3) $\frac{n^2}{2}$ (4) $\frac{n}{4}$

38. When we are sampling from a normal population with unknown mean μ and unknown variance σ^2, which of the following is a simple hypothesis ?

(1) $H_0 : \mu = 10$ (2) $H_0 : \mu = 20, \sigma^2 = 4$

(3) $H_0 : \sigma^2 = 4$ (4) All the three mentioned above

39. Let $x_1, x_2, ... x_n$ be a random sample from a uniform distribution on the interval $(0, \theta)$. then consider the following :

(1) $x_{(n)}$ is the complete sufficient statistics for θ

(2) $x_{(n)}$ is an unbiased estimator for θ

(3) $\left(\frac{n+1}{n}\right)x_{(n)}$ is the asymptotically unbiased for θ

(4) $\left(\frac{n+1}{n}\right)x_{(n)}$ is the UMVUE for θ

40. Let $X_1, X_2 ....X_n$ be a random sample from normal distribution with mean θ and variance θ, If $T_1 = \sum_{i=1}^{n} x_i$ and $T_2 = \sum_{i=1}^{n} x_i^2$, then

(1) T_1 and T_2 are jointly sufficient for θ

(2) only T_1 is sufficient for θ

(3) only T_2 is sufficient for θ

(4) neither T_1 nor T_2 is sufficient for θ

41. A study compared five different methods for teaching descriptive statistics. The five methods were traditional lecture and discussion, programmed textbook instruction, programmmed text with lectures computer instruçtion, and compurter instruction with lectures. 45 students were randomly assigned, 9 to each method. After completing the course, students took a 1-hour exam. Which of the following is the correct degree f freedom for an F-test for evaluating if the avgerage test scores are different for the different teaching methods ?

(1) (5, 45)
(2) (5, 44)
(3) (4, 44)
(4) (4, 40)

42. In a survey of population consisting of N = nk units, a sample of n units is selected with a random start between 1 to k and then selecting every k^{th} unit.

Assertion (A) : The variance of the unbiased estimate of the population mean cannot be estimated.

Reason (R) : No unbiased estimate of population mean exists.

Select your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is true but R is false

(4) A is false but R is true

43. Under usual notations, the effect total [A] in a factorial experiment is given by :

(1) (1) + (a) - (b) + (ab) + (c) + (ac) - (bc) + (abc)

(2) -(1) - (a) - (b) - (ab) + (c) + (ac) + (bc) + (abc)

(3) -(1) + (a) - (b) + (ab) - (c) + (ac) - (bc) + (abc)

(4) -(1) - (a) - (b) + (ab) + (c) + (ac) - (bc) + (abc)

44. An exhaustive list of all members of the population along with their identification particulars is called :

(1) Sampling design (2) Sampling frame

(3) Population design (4) Population frame

45. Read the following statements carefully :

S_1 : Systematic sampling is partly probabilistic and partly non-probabilistic.

S_2 : Systematic sampling provides unbiased estimates if there are some periodic feature in the list of units.

Choose the correct answer from the following :

(1) Both S_1 and S_2 are true (2) S_1 is true but S_2 is false

(3) S_1 is false but S_2 is true (4) Both S_1 and S_2 are false

46. The responses in a factorial experiment with factors A and B each at two levels with three replicatios are as follows (in usual notations):

[1] = 18, [a] = 17, [b] = 25 and [ab] = 30

The sum of square due to interaction AB is :

(1) 6 (2) 4

(3) 3 (4) None of above

47. In randomized block design with k treatments and two blocks with mean B_1 and B_2 which one of the following is the orrect sum of the squares due to blocks ?

(1) $(B_1 - B_2)^2/k$ (2) $(B_1 - B_2)^2/2k$

(3) $K(B_1 - B_2)^2/2$ (4) $(B_1 - B_2)^2/2$

48. For a political science class, it was required to get opinion on free primary education of members of a particular party from a town. The town ws divided into 17 blocks, each with similar socio-economic status distribution and other diversities. Rather than trying to obtain a list of all members of that party of the town. It was decided to select 3 blocks at random, using simple random sampling without replacement. For selected blocks, the list of all current members of the party was collected from the block office of the party. Then opinion on free primary education of the members was collected. What kind of design was used ?

(1) simple random sampling (2) Stratified sampling

(3) systematic sampling (4) None of the above

49. A researcher who wanted to determine the benefits of using a new beginning algebra study tehnique obtained permission from the school of a district to select students. The researcher prepared a list of all beginning algebra students of that school and selected 50 out of them at random. The researcher divided the students randomly into two groups each consisting of 25 students. One group participated in the new study program and the other group was trained through the traditional study techniques. The greatest weakness of this study is :

(1) the division of the sample into two groups of 25

(2) the use of only 50 students in the sample

(3) the use of students from only one school

(4) the use of only two different study techniques

50. A random sample of size n is drawn from a population of size N, having mean μ and standard deviation σ, using simple random sampling without replacement. The covariance between any two sample observations will be :

(1) $-\sigma^2/N$ (2) $-\sigma^2/(N-1)$

(3) $-\sigma^2/n$ (4) $-\sigma^2/(n-1)$

51. **Assertion (A)** : The total error insample surveys will be more than that in complete enumeration.

Reason (R) : In sample surveys both sampling and non-sampling errors occur where as in complete enumeration only non-sampling errors occur.

Choose your answr from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is true but R is false

(4) A is false but R is true

52. The geometric mean of 6 values is 59 and the geometric mean of 4 of them is 69. The geometric mean of the other two is ;

(1) $(69)^6/(59)^2$ (2) $(69)^3/(59)^2$

(3) $(59)^6/(69)^2$ (4) $(59)^3/(69)^2$

53. The daily maximum temperature of Varanasi city was recorded in Celsius for all 31 days of May 2015. The arithmetic mean and geometric mean of these 31 observations were found to be 45° C (degree Celsius) and 40° C respectively. A 'C' degree Celsius temperature is equal to 'F' degree Fahrenheit (°F) where F = 32 + 9C/5. If the above data would have been measured in Fahrenheit.

S1 : The arithmetic mean would have been 113°F

S2 : The geometric mean would have been 104°F

Choose yours answr from the following codes :

(1) Both S1 and S2 are correct

(2) S1 is correct but S2 is false

(3) S1 is false but S2 is correct

(4) Both S1 and S2 are false

54. The mean and median of 100 observations are 50 and 52 respectively. The value of the largest observation is 100. It is later found that it is actually 110. The correct mean and median is respectively :

(1) 50, 52 (2) 50, 62

(3) 50.1, 52 (4) 50.1, 52.1

55. If the random variables X and Y are such that $Y = X^2$, then the Pearson's correlation coefficient between X and Y :

(1) Will be always zero

(2) Will be always positive and greater than Zero

(3) May be negative, if equally spaced non-negative values of X and correspondig values of Y are taken as data

(4) May be positive, negative or zero dependig on the choice values of x and corresponding values of Y.

56. From population of size 100, a simple random sample drawn by using without replacement method has the observations as 4, 2, 2, 4 and 3.

Asserition (A) : The sample total 15 is net unbiased estimate of population total.

Reason (R) : The given sample canot be a simple random sample drawn by using without replacement method

Select your answr from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is false but R is true

(4) A is true but R is false

57. $X_1\ X_2\ ....\ X_n$ is a random sample from with known mean 9 and unknown variance σ^2 .

S1 : $\{(X_1 + X_2 ... + X_n)^2/n\}$-9n is not unbiased estimator of σ^2

S2: The only unbiased estimator of σ^2 is

$$\left\{\left(x_1^2 + x_2^2 + ... + x_n^2\right) - \left(x_1 + x_2 + ... + x_n\right)^2/n\right\}/(n-1)$$

Choose yours answer from the following codes :

(1) Both S1 and S2 are correct

(2) S1 is correct but S2 is false

(3) S1 is false but S2 is correct

(4) Both S1 and S2 are false

58. $3x + 4Y = 11$ and $4X + 3Y = 10$ are the equations of the pair of regression lines for a given data. Then:

(1) $3X + 4Y = 11$ is the equation of regression of X on Y.

(2) $4X + 3Y = 10$ is the equation of regression of Y on X.

(3) Correlation coefficient between X and Y is 0.75

(4) Variance of X and Y are equal

59. In case of three variables X_1, X_2 and X_3, all pairwise simple correlation coefficients are equal. Then (in the usual notations)

(1) $R^2_{1.23} = r_{12.3}r_{13.2}$ (2) $R^2_{1.23} = 2r_{12.3}r_{13.2}$

(3) $R^2_{1.23} = \frac{r_{12.3}r_{13.2}}{2}$ (4) $R^2_{1.23} = \frac{r_{12.3}r_{13.2}}{4}$

60. The following results were obtained from the analysis of a randomized block design with 6 treatments in 5 block :

Mean sum of square due to block = 20

Mean sum of square due to treatment = 20

Total sum of squares = 220

The error mean square is

(1) 4 (2) 2 (3) 10 (4) 20

61. A population consists of 6 units (a, b, c, d, e and f) a sample of size 2 is selected by SRSWR. The probability that units a and b are in the sample is :

(1) 1/3 (2) 1/9 (3) 1/18 (4) 1/15

62. Each observation in a data is multiplied by a positive integer 'm' and then 'm' is subtracted from each. If the origial value of the coefficient of variation is VO and the new value is VN, then

(1) VO > VN

(2) VO < VN

(3) VO = VN

(4) Nothing definite can be said unless the exact value of 'm' is known.

63. X and Y are the random variables taking values between zero and one. If correlation coefficient between X and Y is 0.7, the correlation coefficient between U = 10 + 3X and V = 10 - 3Y will be :

(1) Less than 0.7 but greater than zero

(2) Zero

(3) 0.7

(4) -0.7

64. In testing the following hypothesis, in which case we CANNOT use F-test, even when we assume that the data is drawn from the normal populations (s) (notations carry their usual meaning).

(1) $H_0 : \sigma_1^2 = \sigma_2^2$ aganist $H_1 : \sigma_1^2 = \sigma_2^2$

(2) $H_0 : \rho = 0$ aganist $H_0 : \rho > 0$

(3) $H_0 : \mu_1 = \mu_2 = ... \mu_k$ aganist $H_0 : \mu_1 = \mu_2$ forsome $i = j$

(4) $H_0 : \sigma_1^2 = 25$ against $H_0 : \sigma_1^2 \neq 25$

65. The joint p.d.f of random variable (X, Y) is f(x,y) which is equal to k (real constant) for $0 < x < y < 1$ and zero elsewhere. The value of k is :

(1) 1 (2) 2

(3) 1/2 (4) Any number between 0 and 1

66. Read the following statement in context of intra-class correlation coefficient

S1 : It can take positive and negative values.

S2 : A negative value of it has same significance as a departure from independence as an equivalent positive

Choose your answer from the following codes :

(1) Both S1 and S2 are correct

(2) S1 is correct but S2 is false

(3) S1 is false but S2 is correct

(4) Both S1 and S2 are false

67. In case of three variables X_1, X_2 and X_3 all pair wise simple correlation coefficients are equal to r. Then the partial correlation coefficient $r_{12.3}$ is :

(1) r (2) $\frac{1}{r+1}$

(3) $\frac{r}{r+1}$ (4) $\frac{1}{1-r}$

68. For a given frequency distribution, the value of second, third central and fourth moments are reproted as 4, 16 and 80 respectively.

Assertion (A) : The frequency curve will be positively skewed and leptokurtic.

Reason (R) : The central moments are in increasing order.

Select your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is true but R is false

(4) Both A and R is false

69. The test for goodness of fit is :

(1) Right tail test

(2) Left tail test

(3) Two tail (both right and left) test

(4) Neither right nor left tail test

70. A group of 30 students are classified as folwos :

	Colour of the eye			
Sex	**Blue**	**Brown**	**Black**	**Total**
Male	5	8	2	15
Female	5	5	5	15
Total	10	13	7	30

What is the probability that a randomly selected student will be either female or has black eye colour ?

Select your answer from the following :

(1) 7/30 (2) 15/30

(3) 28/30 (4) 17/30

71. The standard error of the sample correlation coefficient r based on n paired observations is :

(1) $\frac{1+r^2}{\sqrt{n}}$ (2) $\frac{1-r^2}{n}$

(3) $\frac{1-r^2}{\sqrt{n}}$ (4) $\frac{1+r^2}{n}$

72. A group of 20 boys and 20 girls aged 2 years were randomly selected and are paired so that each pair consists of one boy and one girl. Their increase in weight in a year was noted down. It is known that increase in weight of boys and girls are normally distributed. We want to test the null hypothesis that the average increase in the weight of boys and girls are same against the alternative hypothesis that increase in the weight of boys is more than that of girls :

Assertion (A) : We should use one tail paired t-test.

Reason (R) : The observations are paired.

Select your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is true but R is false

(4) A is false but R is true

73. If X follows standard Cauchy distribution then 1/X will follow :

(a) Standard Cauchy distribution

(b) The same distribution as that of square root of F-statistic with (1,1) degree of freedom.

(c) The same distribution as that of t-statistic with one degree of freedom.

Choose your answer from the following :

(1) Only (a) and (b) are correct

(2) Only (a) and (c) are correct

(3) Only (c) and (b) are correct

(4) (a), (b) and (c) all are correct

74. The variance of the mean of a simple random sample drawn by using without replacement method from a population of 36 uits is one tenth of the population variance. The sample size would be :

(1) 8 (2) 9 (3) 10 (4) 11

75. X and Y are independent random variables with zero mean and standard deviations 9 and 4 respectively, If X + 2Y anf KX-Y are uncorrelated, the value of K would be :

(1) 32/81 (2) 64/81 (3) 1/2 (4) 2

76. In order to fit a polynomial of degree 'r' based on 'n' observation (r < n + 1) using least square method, the summations that we need to calculate is :

(1) 3n + 1 (2) 3r + 1

(3) n + 1 (4) r + 1

77. In CRD with 5 treatments, the degree of freedom for the error is 16. If the replications for the treatments first, second, fourth and fifth are 3, 4. 4 and 5 respectively, then the number of replications for third treatemtn is :

(1) 3 (2) 4 (3) 5 (4) 6

78. A single observation X is drawn from the Bernoulli population with parameter θ. On the basis of it, we wish to test the null hypothesis $H_0 : \theta = 2/3$ against $H_1 : \theta > 2/3$. The test procedure is to reject H_0 if X =0. However if X = 1, we toss two unbiased coins and reject H_0 if no head appears. The power function of the test would be :

(1) $1/2 - 3\theta/8$ (2) $1-3\theta/4$

(3) $\theta/2$ (4) $\theta/4$

79. Select the answer from the following :

For testing the goodness of fit, we use

(1) Chi-square test only

(2) Kolmogroy - Smirnov test only

(3) Either of the above two

(4) Neither of the above two

80. For the given sample of data, the equations of pair of regression lines as reported by a student are X - 2Y = 2 and X + 3Y = 12

Assertion (A) : The mean of X and Y for the given data cannot be 6 and 2 respectively.

Reaseon (R) : The above mentiaoned equations can never be pair of regression lines for any data.

Select your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is true but R is false

(4) A is false but R is true

81. Three treatments A, B and C are distributed randomly to 9 the plots of a square field consisting of 3plots in each row and each column. The final distribution of the treatments is given below :

A B C

B A C

C A B

Assertion (A) : It is layout of a Randomized block design.

Reason (R) : Each treatment is replicated equal number of times

Select your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is true but R is false

(4) A is false but R is true

82. The joint p.d.f. of random variable (X, Y) is f(x,y) which is equal to 2 for $0<x<y<1$ and zero elsewhere. If (mean, variance) of X and Y are (mx, vx) and (my, vy) respectively Then :

(1) mx < my and vx < vy (2) mx < my and vx = vy

(3) mx = my and vx < vy (4) mx > my and vx > vy

83. Mean and variance both of a variable X having frequency disribution as given below are 10.

Class	X_1-X_2	X_2-X_3	X_3-X_4	X_4-X_5	X_5-X_6	X_6-X_7	X_7-X_8
Interval							
di	-3	-2	-1	0	1	2	3
$=\frac{(x_i-a)}{n}$							
f_i	1	3	4	4	4	3	1

What are values of X_1 and X_8 ?

(1) 2.15 (2) 5.15

(3) 0.10 (4) 3.17

84. Which of the following are probability mass functions ?

(i) f(x) = (x-6)/5, for x = 7, 8, 9 and zero elsewhere.

(ii) f(x) = x/21, for x = 1, 2, 3, 4, 5, 6 and zero elsewhere.

(iii) $f(x) = x^2/55$: for x = 1, 2, 3, 4, 5 and zero elsewhere.

Choose the answer from the following :

(1) Only (i) and (ii) (2) Only (i) and (iii)

(3) Only (ii) and (iii) (4) All the three

85. Consider the function $F_{x,y}$ (x,y) = 1 for $x + 2y \geq 1$ and zero for $x + 2y < 1$

in this context, read the following carefully :

Asseration (A) : Fx, y (x, y) is not joint cumulative distribution function any random variable (X, Y).

Reason (R) : The value of $F_{x,y}$ (x,y) jumps from 0 to 1 at every point (x,y) lying on the line $x + 2y = 1$

Choose your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is true but R is false

(4) A is false but R is true

86. F is the cumulative distribution and f, which is symmetric about zero, is the corresponding probability density function of a continuous random variable. Then which of the following statements are true for all choices of $a > 0$?

(i) $f(-a) + f(a) = 1$

(ii) $P(|X| > a) = 2F(-a)$

(iii) $P(|X| \leq a) = 2F(a) - 1$

Choose the answer from the following :

(1) Only (i) and (ii)

(2) Only (i) and (iii)

(3) Only (ii) and (iii)

(4) All the three

87. The random variable (x, y) has the joint probability density function

$$f(x,y)=\begin{cases}kx(x-y)\ for 0<x<2\ and\ -x<y<x\\ 0,\ elsewher\end{cases}$$

Which of the following expressions give the correct value of k ?

S : $K^{-1}=\int_0^2\int_{-x}^{x}x(x-y)dy\,dx$

P : $K^{-1}=\int_0^2\int_y^2 x(x-y)dx\,dy+\int_{-2}^0\int_{-y}^2 x(x-y)dx\,dy$

Choose your answer from the following codes :

(1) Bothe S and P are true (2) S is true but P is false
(3) S is false but P is true (4) Both S and P are false

88. The random variable (x,y) has the joint probability density function

$$f(x,y)=\begin{cases}x(x-y)/8\ for 0<x<2\ and\ -x<y<x\\ 0,\ elsewher\end{cases}$$

Which of the following give the correct expression for the marginal disribution of Y ?

S : $g(y)=\int_0^2\frac{x(x-y)}{8}dx$

P : $g(y)=\begin{cases}\int_y^2\frac{x(x-y)}{B}dx, if 0<y<2\\ \int_{-y}^2\frac{x(x-y)}{B}dx, if -2<y<0\end{cases}$

Choose your answer from the following codes :

(1) Both S and P are true (2) S is true but P is false
(3) S is false but P is true (4) Both S and P are false

89. X and Y are two random variables having finite means. Which of the following are always true ?

(i) E [Min. (X,Y)] $\leq$ Min. [E(X),E(Y)]

(ii) E [Max. (X,Y)] $\leq$ Max. [E(X),E(Y)]

(iii) E [Min. (X,Y) + Min.(X,Y)+] =[E(X), E(Y)]

Chooose th answer from the following :

(1) Only (i) and (ii)
(2) Only (i) and (iii)
(3) Only (ii) and (iii)
(4) All the three

90. Consider the following joint probability density function of random variable (X,Y).

$f(x, y) = [2x^2y]^{-1}\, 1_{(1,\infty)}(x) 1_{(1/x,x)}(y)$.

The marginal distribution of Y is obtained from

(1) $\left[\int_1^{\infty} \frac{1}{2x^2y} dx\right] 1_{(1,\infty)}(y)$

(2) $\left[\int_{1/y}^{\infty} \frac{1}{2x^2y} dx\right] 1_{(0,1)}(y)$

(3) $\left[\int_0^{y} \frac{1}{2x^2y} dx\right] 1_{(0,1)}(y) + \left[\int_y^{\infty} \frac{1}{2x^2y} dx\right] 1_{(1,\infty)}(y)$

(4) $\left[\int_{\frac{1}{y}}^{\infty} \frac{1}{2x^2y} dx\right] 1_{(0,1)}(y) + \left[\int_y^{\infty} \frac{1}{2x^2y} dx\right] 1_{(1,\infty)}(y)$

91. Which of the graph uses only one axis to show the data summary ?

(1) Histogram (2) Line diagram

(3) Box and whisker plot (4) Frequency polygon

92. In a systemaic sample of size 10 taken from a population of size 100, the 27^{th} , 87^{th}, 57^{th} , 97^{th} and 7^{th} units of the population are included, then rest of the five units of the sample are :

(1) 17^{th} , 67^{th}, 37^{th} , 77^{th} and 47^{th} units of the population

(2) 10^{th} , 20^{th}, 30^{th} , 40^{th} and 50^{th} units of the population

(3) 1^{th} , 2^{nd}, 3^{rd} , 4^{th} and 5^{th} units of the population

(4) Any five units of the population

93. If the coefficient of variations of the study variable Y and the auxiliary variable X in a population are 18 and 32 respectively, for what range of the coefficient of correlation ρ between X and Y the ratio method of estimation will be preferable over simple random sample ?

(1) $\rho < 0.63$ (2) $0.33 < \rho < 0.80$

(3) ρ . 0.63 but less than 0.85 (4) $\rho \geq 0.88$

94. Read the following statements :

S1 : Classical definition of probability sometimes fails to provide the measure of probability even when the sample space (space of outcomes) is discrete and finite.

S2 : Statistical definition only provides a frequentist's interpretaion of probability.

Choose the most appropriate answer from the following codes :

(1) Both S1 and S2 are correct

(2) S1 is correct but S2 is incorrect

(3) S1 is incorrect but S2 is correct

(4) Neither S1 nor S2 are correct

95. Simpsons 1/3rd rule is obtained by taking n = ... in the general quadrature formula. Fill up the above blank from one of the following :

(1) 1 (2) 2 (3) 3 (4) 4

96. X and Y are jointly distributed with probability density function

$f(x,y) = (1 + xy)/4$; $-1 < x < +1$ and $-1 < y < +1$

= 0 ; elsewhere

Comment on the independence of the variables and choose your answer form the following codes :

(1) X and Y are independent (2) X and Y^2 are independent

(3) X^2 and Y are independent (4) X^2 and Y^2 are independent

97. A random variable X has the cumulative distribution function F(x) given below :

$F(x) = 0$, if $x \leq 0$

$= x$, if $0 < x \leq 1$

$= 1$, if $1 < x$

The probability density function corresponding to F(x), if it exists, is denoted by f(x). Then

S : $f(x) = 1$, if $0 < x < 1$

$= 0$, elsewhere

P : F(x) is discontinuous at $x = 0$ and $x = 1$

Choose your answer from the following codes :

(1) Both S and P are true

(2) S is true but P is false

(3) S is false but P is true

(4) Both S and P are false

98. S is the set of positive real number less than or equal to 6 i.e. $S = \{x : 0 \leq x \leq 6\}$. If $A = \{x : 1 \leq x \leq 3\}$, $B = \{x : 2 < x \leq 6\}$, $C = \{x : 3 \leq x < 5\}$ and $D = \{x : 0 \leq x < 2\}$, which of the following is **NOT correct** ?

(1) $A \cup B = \{x : 1 \leq x \leq 6\}$ (2) $B \cup D = S$

(3) $A \cap B = \{x : 2 < x \leq 3\}$ (4) $C \cap B = C$

99. Consider the following function f(x) :

$f(x) = x$, if $0 < x \leq 1$

$= 2 - x$, if $1 < c \leq 2$

$= 0$, elsewhere

In this context, read the following statement carefully :

Assertion (A) : f(x) is neither a cumulative distribution function nor a probability density function.

Reason (R) : f(x) is neither a monotone non- decreasing function of x nor a non-negative continuous function of x.

Select your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A.

(2) Both A and R is true but R is not correct explanation of A.

(3) A is true but R is false

(4) Both A and R are false

100. Which of the following is most useful for checking the equal variance across groups for ANOVA ?

(1) Side-by-side box plots showing roughly equally sized boxes for each group.

(2) Histograms suggesting nearly normal disributions of data i each group.

(3) Summary statisics suggesting that the means of each group are roughly equal.

(4) Summary statisics suggesting roughly equal ranges for each group

101. Consider the following segment of C program :

```
Int x, y, n ;
x = 1;
y = 1;
if ( n > 0)
x = x + 1 ;
else
y = y - 1;
```

After execution of above program segment the value of x and y if n=1 is:

(1) x = 2, y = 0;
(2) x = 1, y = 0 ;
(3) x = 1, y = 1 ;
(4) x = 2, y = 1

102. Consider the following segment of C program

```
int a, b, c, d, f, g ;
float e;
a = 15
b = 10;
c = a++ - b;
d =++b +a;
b--;
e = float (a)/b;
f = a%b;
a* =b;
```

Values of a, b, c, d, e and f after execution of above segments are :

(1) a = 176, b = 10, c = 5, d = 27 , e = 1.600, f = 6
(2) a = 170, b = 10, c = 5, d = 26 , e = 1, f = 5
(3) a = 176, b = 11, c = 5, d = 26 , e = 1, f = 5
(4) a = 160, b = 10, c = 5, d = 27 , e = 1.600, f = 6

103. How many of the following declarations are correct ?

Int x ;

float letter, DIGIT;

double = p, q

m, n, z ; INTEGER

long int m; count;

long float temp;

Select your answer from the following codes ;

(1) 3 (2) 1 (3) 2 (4) 6

104. C language has been developed by :

(1) Dennis Ritchie (2) Ken Thompson

(3) Peter Norton (4) Martin Richards

105. C program is converted into machine language with the help of :

(1) an interpreter (2) a compiler

(3) an Operating System (4) Arithmetic Logic Unit

106. Consider the following C program :

```
main ()
{
int num 1, num 2, num 3;
scanf ("%2d %5d", & num 1, & num 2);
scanf ("%2d", & num3);
printf ("%d%d%d", num 1, num2, num3);
}
```

If the data input to the program 31426, 50, and 100 then the output will be :

(1) 31426,50,100 (2) 50.31426,100

(3) 314.2650,100 (4) 31.426, 50

107. Consider the following C program :

```
main ()
{
int num 1, num 2, num 3;
scanf ("%d %*d%d", & num 1, & num 2, & num 3);
printf ("%d%d%", num 1, num2);
}
```

If the data input to the program 123, 456, and 789 then the output will be :

(1) 123, 789 (2) 123, 456

(3) 456, 789 (4) 12, 34

108. Which of the following is valid "real variable" in FORTRAN ?

(1) PRAVEEN (2) SIGMA

(3) LION (4) C

109. Words having 8-bits are to be stored into computer memory. The numbers of lines required for writing into memory are :

(1) 1 (2) 2 (3) 4 (4) 8

110. Which of the following is valid in FORTRAN ?

(1) 146.86E + 27 (2) 125*E9

(3) +142.7E (4) 123,45E - 6

111. -8 is equal to signed binary number :

(I) 10001000 (2) 00001000

(3) 10000000 (4) 11000000

112. Which of the following is volatile memory ?

(1) ROM (2) RAM

(3) PROM (4) EEPROM

113. In FORTRAN what will be the correct representaion for 457000 ?

(1) $.46 \times 10^6$ (2) 45.7×10^3

(3) .45E6 (4) .45E-6

114. What is the correct expression for, $\log_e \sqrt{\frac{x}{yz}}$

(1) LOG(SQRT (X/Y*Z))) (2) LOG(SQRT (X/Y**Z)))

(3) ALOG(SQRT (X/Y*Z))) (4) ALOG(SQRT (X/Y**Z)))

115. The hexadecimal number 'A0' has the decimal value equivalent to :

(1) 80 (2) 256 (3) 100 (4) 160

116. The default MS Excel file extension is :

(1) .XLR (2) .EXE

(3) .EXL (4) .XLS

117. Which of the following are special characters in FORTRAN 77 ?

(a) + (b) $ (c) : (d) % (e) blank

Choose your answer from the following codes :

(1) (a), (b), (c), (d) (2) (a), (c), (d), (e)

(3) (a), (b), (c), (e) (4) (b), (c), (d), (e)

118. The product of two binary nummbers (1011) and (1001) is :

(1) 1100011 (2) 1010100

(3) 1011001 (4) 100110

119. FORTRAN statements are written starting from the :

(1) 6^{th} column to column 72 (2) 6^{th} column to column 73

(3) 7^{th} column to column 72 (4) 7^{th} column to column 73

120. Which of the following is not a Statistical Package ?

(1) SPSS (2) SAS

(3) STATA (4) C

ROUGH WORK
रफ़ कार्य

ROUGH WORK
रफ़ कार्य

ROUGH WORK
रफ़ कार्य

अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली-काली बाल-प्वाइंट पेन से ही लिखें)

1. प्रश्न पुस्तिका मिलने के 30 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में ***लिफाफा रहित प्रवेश-पत्र के अतिरिक्त,*** लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. ***उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा। केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।***
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. ***उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।***
6. ***ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्नपुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्नपुस्तिका पर अनुक्रमांक और ओ० एम० आर० पत्र संख्या की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।***
7. ***उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।***
8. ***प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिए आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।***
9. प्रत्येक प्रश्न के उत्तर के लिए केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ***ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो संबंधित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।***
11. रफ कार्य के लिए प्रश्न-पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा उत्तर-पुस्तिका के अंतिम पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त *केवल* ***ओ एम आर उत्तर-पत्र*** परीक्षा भवन में जमा कर दें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की, भागी होगा/होगी।

SEAL