DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

Test Booklet No. : **Series**

28501

TEST BOOKLET

A

Paper—II

Part–II (ACCOUNTANCY/STATISTICS/MATHEMATICS)

(Objective Type)

Time Allowed : 2 Hours **Full Marks : 100**

Read the following instructions carefully before you begin to answer the questions :

1. The name of the Subject, Roll Number as mentioned in the Admission Certificate, Test Booklet No. and Series are to be written legibly and correctly in the space provided on the Answer-Sheet with Black/Blue ballpoint pen.
2. **Answer-Sheet without marking Series as mentioned above in the space provided for in the Answer-Sheet shall not be evaluated.**
3. All questions carry equal marks.

   The Answer-Sheet should be submitted to the Invigilator.

   Directions for giving the answers : Directions for answering questions have already been issued to the respective candidates in the 'Instructions for marking in the OMR Answer-Sheet' along with the Admit Card and Specimen Copy of the OMR Answer-Sheet.

   Example :

   Suppose the following question is asked :

   The capital of Bangladesh is
   (A) Chennai
   (B) London
   (C) Dhaka
   (D) Dhubri

   You will have four alternatives in the Answer-Sheet for your response corresponding to each question of the Test Booklet as below :

   Ⓐ Ⓑ Ⓒ Ⓓ

   In the above illustration, if your chosen response is alternative (C), i.e., Dhaka, then the same should be marked on the Answer-Sheet by blackening the relevant circle with a Black/Blue ballpoint pen only as below :

   Ⓐ Ⓑ ● Ⓓ

   The example shown above is the only correct method of answering.
4. Use of eraser, blade, chemical whitener fluid to rectify any response is prohibited.
5. Please ensure that the Test Booklet has the required number of pages (56) immediately after opening the Booklet. **Students can attend questions of any one subject—Accountancy or Statistics or Mathematics.** In case of any discrepancy, please report the same to the Invigilator.
6. No candidate shall be admitted to the Examination Hall/Room 20 minutes after the commencement of the examination.
7. No candidate shall leave the Examination Hall/Room without prior permission of the Supervisor/ Invigilator. No candidate shall be permitted to hand over his/her Answer-Sheet and leave the Examination Hall/Room before expiry of the full time allotted for each paper.
8. No Mobile Phone, Electronic Communication Device, etc., are allowed to be carried inside the Examination Hall/Room by the candidates. Any Mobile Phone, Electronic Communication Device, etc., found in possession of the candidate inside the Examination Hall/Room, even if on off mode, shall be liable for confiscation.
9. No candidate shall have in his/her possession inside the Examination Hall/Room any book, notebook or loose paper, except his/her Admission Certificate and other connected papers permitted by the Commission.
10. Complete silence must be observed in the Examination Hall/Room. No candidate shall copy from the paper of any other candidate, or permit his/her own paper to be copied, or give, or attempt to give, or obtain, or attempt to obtain irregular assistance of any kind.
11. This Test Booklet can be carried with you after answering the questions in the prescribed Answer-Sheet.
12. Noncompliance with any of the above instructions will render a candidate liable to penalty as may be deemed fit.
13. No rough work is to be done on the OMR Answer-Sheet. You can do the rough work on the space provided in the Test Booklet.

N.B. : There will be negative marking @ 0·25 per 1 (one) mark against each wrong answer.

SEAL

[No. of Questions : 100

OR

STATISTICS

1. The point of intersection of the 'less than' and the 'more than' ogives corresponds to the

(A) mean

(B) median

(C) mode

(D) geometric mean

2. Consider the following data set :

6, 8, 10, 7, 1, 6, 7, 11, 6, $2k+5$, 9, 7, 15

What would be the value of k if the mode of the data set is 7?

(A) 3

(B) -1

(C) 1

(D) 15

3. The mean of four numbers is 37. The mean of the smallest three of them is 34. If the range of the data is 15, what is the mean of the largest three?

(A) 41

(B) 38

(C) 40

(D) 39

4. An urn contains 6 white, 4 red and 9 black balls. If three balls are drawn at random, then the probability of none of them being red is

(A) $\frac{{}^4C_3}{{}^{19}C_3}$

(B) $\frac{{}^4C_3}{{}^{15}C_3}$

(C) $\frac{{}^{15}C_3}{{}^{19}C_3}$

(D) 0

5. If $f(x) = \begin{vmatrix} 1 & 2 \\ x & a \end{vmatrix}$, then $2f(x) - f(2x) = ?$

(A) $2a$

(B) $a+4x$

(C) $a-4x$

(D) a

6. The primary purpose of using a sampling frame in the data collection process is

(A) to ensure that the sample is representative of the population

(B) to reduce the sample size needed

(C) to eliminate all sampling errors

(D) to increase the cost-effectiveness of the study

7. In a frequency curve of scores, the mode was found to be higher than the mean. The distribution would therefore be

(A) symmetric

(B) normal

(C) positively skewed

(D) negatively skewed

8. The probability that a leap year selected at random will contain 54 Sundays is

(A) 0

(B) $\frac{2}{7}$

(C) $\frac{1}{6}$

(D) $\frac{54}{365}$

9. If two observations are 10 and –10, then their harmonic mean is

(A) 10

(B) 0

(C) ∞

(D) 5

10. If a coin is tossed until a head appears, then the expectation of the number of tosses required is

(A) 3

(B) 2

(C) 1

(D) 4

11. If X_1 and X_2 are two independent Poisson variates with means 1 and 2 respectively, then $P(X_1 + X_2 < 4)$ is

(A) $13e^{-3}$

(B) $4e^{-3}$

(C) $3e^{-3}$

(D) $12e^{-3}$

12. Let X be a random variable following normal distribution with mean zero and variance 9. If $a = P(X \geq 3)$, then $\Pr(|X| \leq 3)$ equals

(A) a

(B) $2a$

(C) $1-2a$

(D) $1-a$

13. The salary of workers in a factory follows a binomial $\left(300, \frac{1}{6}\right)$ distribution. What will be the mean and standard deviation of the distribution?

(A) 40 and 41·6

(B) 50 and 5·5

(C) 50 and 41·6

(D) 50 and 6·4

14. If a random variable X takes the values 1, 2, 3, ⋯ with the probability function

$$f(r) = \frac{\lambda^r}{\lfloor r}; \quad r = 1, 2, 3, \cdots, \infty$$

then the value of λ is

(A) $\log_e 2$

(B) $\log_e 1$

(C) $\log_e 5$

(D) $\log_e 10$

15. The probability of rejecting an alternative hypothesis, when it is false, is

(A) type I error

(B) type II error

(C) level of significance

(D) power of the test

16. For two events A_1 and A_2, if $P(A_1) = \frac{2}{3}$, $P(A_2) = \frac{3}{8}$ and $P(A_1 \cap A_2) = \frac{1}{4}$, then A_1 and A_2 are

(A) mutually exclusive and independent

(B) independent but not mutually exclusive

(C) mutually exclusive but not independent

(D) neither mutually exclusive nor independent

17. "If X is a continuous random variable with mean μ and variance σ^2, then for any positive number k, $P\{|X-\mu| \geq k\sigma\} \leq \frac{1}{k^2}$."

This inequality is known as

(A) Lyapunov's inequality

(B) Khintchine's inequality

(C) Chebyshev's inequality

(D) Cramer's inequality

18. The marginal distribution of a subset of a multivariate normal random vector is

(A) uniformly distributed

(B) exponentially distributed

(C) normally distributed only under certain conditions

(D) always normally distributed

19. A random variable X with moment-generating function

$$M_X(t) = \left(\frac{2}{3} + \frac{1}{3}e^t\right)$$

is distributed with

(A) mean $= \frac{2}{3}$ and variance $= \frac{2}{9}$

(B) mean $= \frac{1}{3}$ and variance $= \frac{2}{9}$

(C) mean $= \frac{1}{3}$ and variance $= \frac{2}{3}$

(D) mean $= \frac{2}{3}$ and variance $= \frac{1}{9}$

20. Let $X = (X_1, X_2)$ be a bivariate normal random vector with mean vector $\mu = \begin{pmatrix} 5 \\ 7 \end{pmatrix}$ and covariance matrix

$$\Sigma = \begin{pmatrix} 9 & 3 \\ 3 & 4 \end{pmatrix}$$

Then the marginal distribution of X_1 is

(A) $N(5, 9)$

(B) $N(5, 7)$

(C) $N(7, 9)$

(D) $N(7, 4)$

21. In a one-way ANOVA, the 'between group variance' represents

(A) variability within each group

(B) variability due to the factor being tested

(C) total variability in the data

(D) Variability is not explained by the model

22. If we have a sample of size n from a population of N units, then the finite population correction is

(A) $\frac{N-1}{N}$

(B) $\frac{n-1}{N}$

(C) $\frac{N-n}{N}$

(D) $\frac{N-n}{n}$

23. If the observations recorded on five sampled items are 3, 4, 5, 6, 7, then the sample variance is

(A) 1

(B) 0

(C) 2

(D) 2·5

24. The sampling error can be reduced by

(A) applying cross-sectional study

(B) eliminating the errors

(C) increasing the sample size

(D) decreasing the sample size

25. Under proportional allocation, the size of the sample from each stratum depends on

(A) total sample size

(B) size of the stratum

(C) population size

(D) All of the above

26. Which one of the following non-parametric tests is analogous to the chi-square test of goodness of fit?

(A) Mann-Whitney U test

(B) Kolmogorov-Smirnov test

(C) Wilcoxon test

(D) Median test

27. If there are 10 symbols of two types, equal in number, then the maximum possible number of runs is

(A) 2

(B) 5

(C) 8

(D) 10

28. Consider a contingency table of order (4×3). The degrees of freedom for the chi-square statistic will be

(A) 6

(B) 8

(C) 9

(D) 12

29. The ordinary sign test considers the differences of the observed values from the hypothesized median in terms of

(A) signs only

(B) signs and magnitude

(C) magnitude only

(D) None of the above

30. The sum of the differences between the actual values of Y and its values obtained from the fitted regression line is always

(A) minimum

(B) positive

(C) zero

(D) negative

31. Given $x = 2y + 4$ and $y = kx + 6$ are the lines of regression of X on Y and Y on X respectively. If the value of r is 0·5, then find the value of k.

(A) 0·5

(B) 0·325

(C) 0·25

(D) 0·125

32. The significance of the simple correlation coefficient can be tested by applying

(A) Z-test

(B) t-test

(C) χ^2-test

(D) F-test

33. If the correlation coefficient between X and Y is 0·3, then the value of the correlation coefficient between $2X$ and $3Y$ is

(A) 0·3

(B) 0·18

(C) 0·15

(D) 0·5

34. If the correlation coefficient $r = 0$, then the two lines of regression

(A) will be coincident

(B) will be parallel to each other

(C) will be perpendicular to each other

(D) can be at any angle with each other

35. If $\bar{x} = 25$, $\bar{y} = 120$, $b_{xy} = 2$, then what is the value of x when $y = 130$?

(A) 60

(B) 45

(C) 25

(D) 20

36. For a normal population, the probability of any point falling outside the 3σ control limits is

(A) 0·00256

(B) 0·027

(C) 0·0027

(D) 0·2700

37. Which of the following is the control chart for fraction defective?

(A) u-chart

(B) p-chart

(C) c-chart

(D) d-chart

38. For a given lot size, a single sampling plan is completely specified by

(A) sample size alone

(B) acceptance number alone

(C) Both sample size and acceptance number

(D) Neither sample size nor acceptance number

39. The Sample Registration Scheme (SRS) is the main source of information on

(A) morbidity rate

(B) mortality rate

(C) fertility rate

(D) birthrate and death rate

40. If we have information on the last census population, and the number of births, deaths and migrations for a region in a given period, then population at time t can be estimated by using the formula (in usual notations)

(A) $\hat{P}_t = P_0 + (B - D) + (I - E)$

(B) $\hat{P}_t = P_0 + (B - D) + (E - I)$

(C) $\hat{P}_t = P_0 \{(B - D) + (I - E)\}$

(D) $\hat{P}_t = P_0 + |B - D| + |I - E|$

41. If l_x is the number of persons living at age x and L_x is the average size of the cohort of l_0 persons between ages x and $(x + 1)$, then the relation between l_x and L_x is

(A) $L_x = \frac{x}{2} + l_x$

(B) $L_x = \frac{1}{2} l_x$

(C) $L_x = l_{x+\frac{1}{2}}$

(D) $L_x = l_x + \frac{1}{2}(l_{x+1})$

42. If Laspeyres' price index is 324 and Paasche's price index is 144, then Fisher's ideal index is

(A) 468

(B) 216

(C) 108

(D) 30

43. Index numbers are expressed in

(A) percentages

(B) ratios

(C) degrees

(D) absolute values

44. A family spends on food, housing and clothing in the ratio 5 : 3 : 2. If it experiences the rise in prices of these heads by 40%, 30% and 20% respectively, then the family budget will be increased by

(A) 30%

(B) 33%

(C) 27%

(D) None of the above

45. Which of the following is ***not*** correct about a Randomized Block Design (RBD)?

(A) Every block is randomized separately

(B) Every treatment must appear at least once in every block

(C) Blocks are used to remove the effects of another factor (not of interest) from the comparison of levels of the primary factor

(D) Blocks should contain experimental units that are as different as possible from each other

46. Which of the following is a contrast?

(A) $3T_1 + T_2 - 3T_3 + T_4$

(B) $T_1 + 2T_2 - 2T_3 + T_4$

(C) $T_1 - 3T_2 - T_3 + 3T_4$

(D) $T_1 + T_2 + T_3 - T_4$

47. In an RBD, having 5 treatments and 4 blocks, a treatment is added. The subsequent increase in error d.f. will be

(A) 4

(B) 3

(C) 2

(D) 1

48. In a 5×5 Latin square with one missing value, the totals of the row, column and treatment having one missing observation are 25, 40 and 35 respectively, and the total of all the available observations is 100. The estimate of the missing value is

(A) 15

(B) 20

(C) 25

(D) 30

49. Local control is a device to maintain

(A) homogeneity among blocks

(B) homogeneity within blocks

(C) Both (A) and (B)

(D) Neither (A) nor (B)

50. The elements of the control block in a confounded 2^4-experiment are (1), *bc*, *acd*, *abd*. Then the confounding subgroup is

(A) [*I*, *ABD*, *ACD*, *BC*]

(B) [*I*, *ABC*, *ABD*, *CD*]

(C) [*I*, *ACD*, *BCD*, *AB*]

(D) [*I*, *ABC*, *BCD*, *AD*]

51. In a Linear Programming Problem (LPP), the feasible region is

(A) the set of all possible solutions

(B) the area under the objective function curve

(C) the set of solutions that satisfy all constraints

(D) the region where the objective function equals zero

52. Which of the following statements are **false**?

I. A linear system with more equations than unknowns is always inconsistent.

II. A linear system with more unknowns than equations always has infinitely many solutions.

III. Every linear system has either 0, 1 or infinitely many solutions.

(A) I and II

(B) I and III

(C) II and III

(D) III only

53. The correct statement regarding the dual problem in an LPP is

(A) the dual of the dual problem is the primal problem

(B) the dual problem always has a greater objective function value than the primal problem

(C) the dual problem cannot be solved using the simplex method

(D) the dual problem has more variables than the primal problem

54. An objective function in a general LPP is a

(A) constant function

(B) linear function

(C) non-linear function

(D) None of the above

55. The range of Bernoulli random variable is

(A) the set of real numbers

(B) the set of integers

(C) {0, 1}

(D) the set of positive integers

56. The ratio of 'between sample variance' and 'within sample variance' follows

(A) Z-distribution

(B) χ^2-distribution

(C) t-distribution

(D) F-distribution

57. A random sample of size 20 from a normal population has mean 42 and variance 25. What would be the degrees of freedom for χ^2?

(A) 24

(B) 20

(C) 19

(D) 7

58. The mean difference between 9 paired observations is 15·0 and the standard deviation is 5·0. The value of the statistic t is

(A) 27

(B) 9

(C) 3

(D) 0

59. The variate F (with usual notations) is defined as

(A) $F = \dfrac{\chi_1^2/\nu_1}{\chi_2^2/\nu_2}$

(B) $F = \dfrac{S_1^2}{S_2^2}$

(C) $F = e^{2z}$

(D) All of the above

60. An experimenter measured the IQ of 30 children. He then ordered the data and ranked the children from 30 (most intelligent) to 1 (least intelligent), thus creating a new variable. The new data set would be of type

(A) nominal data

(B) ordinal data

(C) interval data

(D) ratio data

61. If a moderately skewed distribution has mean 30 and mode 36, then the median of the distribution is

(A) 30 (B) 28

(C) 32 (D) 34

62. Let

$f(x, y) = 1, \quad -x < y < x, \; 0 < x < 1$

$= 0,$ otherwise

Then the marginal density function of X is

(A) $2x$

(B) 1

(C) $\frac{1}{2}x$

(D) $2y$

63. If $n_1 = n_2 = n$, then the degrees of freedom to test for the difference of means of two samples of sizes n_1 and n_2 respectively is

(A) $n_1 + n_2 - 2$

(B) $n_1 + n_2 + 2$

(C) $2n - 2$

(D) $2n - 1$

64. The relation between the statistics t and F is

(A) $t_n = F_{(1, n)}$

(B) $t_n^2 = F_{(1, n)}$

(C) $t_n^2 = F_{(2, n)}$

(D) $t_n = nF_{(1, n)}$

65. The distributions possessing the 'lack of memory' property are

(A) gamma distribution and beta distribution

(B) geometric distribution and hypergeometric distribution

(C) geometric distribution and Poisson distribution

(D) geometric distribution and exponential distribution

66. The number of all possible samples of size 2 that can be drawn from a population of 4 units by SRSWR is

(A) 16

(B) 12

(C) 8

(D) 6

67. The total number of ways in which 3 balls can be arranged in 2 cells is

(A) 8

(B) 9

(C) 6

(D) 3

68. A committee of 5 members is to be formed from a group of 7 men and 4 women. The probability that the committee will have exactly 3 men and 2 women is

(A) $\frac{315}{924}$

(B) $\frac{35}{99}$

(C) $\frac{5}{11}$

(D) $\frac{1}{2}$

69. For an exponential distribution with probability density function

$$f(x) = \frac{1}{2}e^{-x/2}, \quad x \geq 0$$

the mean and variance are

(A) $\left(\frac{1}{2}, 2\right)$

(B) $\left(2, \frac{1}{4}\right)$

(C) $\left(\frac{1}{2}, \frac{1}{4}\right)$

(D) (2, 4)

70. For normal distribution, the ratio of quartile deviation, mean deviation and standard deviation is

(A) 10 : 15 : 12

(B) 10 : 12 : 15

(C) 12 : 10 : 15

(D) 15 : 12 : 10

71. The family of parametric distributions, in which the mean is always less than its variance, is

(A) Poisson distribution

(B) binomial distribution

(C) negative binomial distribution

(D) geometric distribution

72. A box contains 4 green and 3 white balls. Two balls are drawn successively. What is the probability that the second selected ball is white given that the first ball is green?

(A) $\frac{1}{2}$

(B) $\frac{3}{7}$

(C) $\frac{4}{7}$

(D) $\frac{1}{3}$

73. To which component of the time series is the term 'recession' attached?

(A) Trend

(B) Seasonal

(C) Cyclical

(D) Irregular

74. The death rate of babies under one month of age is called

(A) neonatal mortality rate

(B) infant mortality rate

(C) maternal mortality rate

(D) foetal mortality rate

75. A life table is also called

(A) survival table

(B) mortality table

(C) life expectancy table

(D) life history table

76. Standardized death rates are particularly useful for

(A) comparing the death rates in males and females

(B) presenting the actual mortality situation of a place

(C) comparing the death rates of two regions

(D) All of the above

77. If the total fertility rate (TFR) is 2250 per thousand for a population and the proportion of female births is 46·2%, then the gross reproduction rate (GRR) is

(A) 1·039

(B) 10·39

(C) 103·9

(D) 1039·5

78. Consumer price index number is constructed for

(A) the higher income group only

(B) factory workers only

(C) all people

(D) a well-defined section of people

79. The probability of accepting a lot with fraction defective P_t is known as

(A) type I error

(B) producer's risk

(C) consumer's risk

(D) acceptance value

80. The moving average method of fitting trend, in a time series data, removes the effect of

(A) long-term movements

(B) short-term movements

(C) cyclic movements

(D) None of the above

81. Simpson's $\frac{1}{3}$rd rule is based on the approximation of the integrand by

(A) a straight line

(B) a quadratic polynomial

(C) a cubic polynomial

(D) a logarithmic function

82. The relation between the operators ∇, Δ and E is

(A) $\nabla + E \equiv E + \nabla \equiv \Delta + E$

(B) $\nabla / E \equiv E / \nabla \equiv E / \Delta$

(C) $\nabla E \equiv E \nabla \equiv \Delta$

(D) None of the above

83. Reduction in the size of a test results in

(A) decrease in its power

(B) increase in its power

(C) Either increase or decrease in its power

(D) No change in its power

84. If l_x represents the number of people living at age x, then find l_x for $x = 22$ using the data given below :

x	10	15	20	25
l_x	42	34	25	18

(A) 22

(B) 21

(C) 20

(D) 19

85. If $X \sim N(0, 2)$ and $Y \sim N(0, 3)$, then $X - Y$ follows

(A) $N(0, 3)$

(B) $N(0, 1)$

(C) $N(0, 2)$

(D) $N(0, 5)$

86. If for a binomial distribution $B(n, p)$, mean = 4 and variance = 4 / 3, then $P(X \geq 5)$ is equal to

(A) $\left(\frac{2}{3}\right)^6$

(B) $\frac{1}{3}\left(\frac{2}{3}\right)^5$

(C) $\left(\frac{1}{3}\right)^6$

(D) $4\left(\frac{2}{3}\right)^6$

87. Variance of $\bar{x}$ under random sampling, proportional allocation and optimum allocation hold the correct inequality as (in usual notations)

(A) $V_{ran}(\bar{x}) \leq V_{prop}(\bar{x}) \leq V_{opt}(\bar{x})$

(B) $V_{ran}(\bar{x}) \geq V_{prop}(\bar{x}) \geq V_{opt}(\bar{x})$

(C) $V_{ran}(\bar{x}) \leq V_{opt}(\bar{x}) \leq V_{prop}(\bar{x})$

(D) $V_{ran}(\bar{x}) \geq V_{opt}(\bar{x}) \geq V_{prop}(\bar{x})$

88. If $A = \begin{bmatrix} 4 & x+2 \\ 2x-3 & x+1 \end{bmatrix}$ is symmetric, then the value of x is

(A) 2

(B) 3

(C) -1

(D) 5

89. The square matrix P is nilpotent if

(A) $P^m = I$

(B) $P^m = 0$

(C) $P^m = P$

(D) None of the above

(where m is any positive integer)

90. If P^T is a transpose of a square matrix P, then

(A) $|P^T| = \frac{1}{|P|}$

(B) $|P^T| = -|P|$

(C) $|P^T| = |P|$

(D) $P^T = |P|^2$

91. The value of the determinant

$$\begin{vmatrix} 0 & c & b \\ -c & 0 & a \\ -b & -a & 0 \end{vmatrix}$$

is

(A) 0

(B) bc

(C) abc

(D) 1

92. If for two attributes A and B, the relation $(AB) = \frac{(A)(B)}{N}$ holds, then the attributes are

(A) independent

(B) positively associated

(C) negatively associated

(D) No conclusion can be made

93. Consider the following information :

Fathers with dark eyes and sons with dark eyes = 50
Fathers with dark eyes and sons with not dark eyes = 79
Fathers with not dark eyes and sons with dark eyes = 89
Fathers and sons with not dark eyes = 782

The value of the coefficient of association Q in this case is

(A) 1·438

(B) 0·69

(C) −1·438

(D) −0·69

94. If 10 is the mean of a set of 7 observations and 5 is the mean of a set of 3 observations, then the mean of the combined set would be

(A) 15

(B) 10

(C) 8·5

(D) 7·5

95. In a sample of 1000 people in a city, 540 are rice eaters and the rest are wheat eaters. To test the hypothesis that both rice and wheat are equally popular in the city, the value of the test statistic to be computed is

(A) 0·289

(B) 0·345

(C) 28·9

(D) 2·53

96. The rank of the matrix

$$A = \begin{bmatrix} 0 & i & -i \\ -i & 0 & i \\ i & -i & 0 \end{bmatrix}$$

is

(A) 1

(B) 2

(C) 3

(D) 4

97. The normal distribution is a limiting case of Poisson distribution when the parameter λ satisfies

(A) $\lambda \to 0$

(B) $\lambda \to \sigma$

(C) $\lambda \to \infty$

(D) $\lambda \to -\infty$

98. Suppose we have a completely randomized design with 4 treatments and 14 plots in total. Given that treatment sum of squares and error sum of squares are 231 and 300 respectively. Then the value of the test statistic F will be

(A) 0·77

(B) 1·925

(C) 1·734

(D) 2·56

99. Student's t-test is applicable only when

(A) the variate values are independent

(B) the variable is distributed normally

(C) the sample is not large

(D) All of the above

100. There is 80 percent chance that a problem will be solved by a student of Statistics and 60 percent chance that it will be solved by a student of Mathematics. If the problem is given to two such students, what is the probability that it will be solved?

(A) 0·92

(B) 0·75

(C) 0·48

(D) 0·14