BCom DEGREE EXAMINATION MAY 2019
(First Semester)

Branch - COMMERCE (COST & MANAGEMENT ACCOUNTING)

BUSINESS MATHEMATICS AND STATISTICS

Time: Three Hours   Maximum: 75 Marks

SECTION-A (10 Marks)
Answer ALL questions
ALL questions carry **EQUAL** marks   (10 x 1 = 10)

1   In a class there are 20 boys and 15 girls. The ratio of boys to girls is
    (i)   4 : 3   (ii)   3 : 4
    (iii) 4 : 5   (iv) 5 : 4

2   Which of the following is not an arithmetic sequence
    (i)   11, 2, 8, -8, -19, ...   (ii)   4, 7, 10, 13, ...
    (iii) 57, 51, 45, 39, ...   (iv) -3, -5, -7, -9, ...

3   What is the first stage of statistics?
    (i)   Summarize data   (ii)   Collect data
    (iii) Classify data   (iv) Analyse data

4   Histogram contains a set of
    (i)   Adjacent rectangles   (ii)   Non-adjacent rectangles
    (iii) Adjacent square   (iv) Adjacent triangles

5   The middle most value of the observation is
    (i)   Mean   (ii)   Median
    (iii) Mode   (iv) None of these

6   The range of the group of numbers -10, -8, 1, 11, 19 is
    (i)   18   (ii)   27
    (iii) 29   (iv) 27

7   If two variables deviate in opposite direction then the correlation will be
    (i)   Positive correlation   (ii)   Negative correlation
    (iii) Perfect correlation   (iv) No correlation

8   If $b_{yx} = 1.2$ and $b_{xy} = 0.3$, then the correlation coefficient $r = ?$
    (i)   0.4   (ii)   0.3
    (iii) 0.6   (iv) 0.36

9   Probability is expressed as
    (i)   Ratio   (ii)   Percentage
    (iii) Proportion   (iv) All the above

10   The mean of binomial distribution is
    (i) n (ii) np
    (iii) npq (iv) λ

SECTION - B (25 Marks)
Answer ALL questions
ALL questions carry **EQUAL** Marks   (5 x 5 = 25)

11 a   The fourth and seventh terms of an AP are 3 and 36. Find the fifteenth term.
                         OR
  b   Define (i) Permutation   (ii) Combination   (iii) Quadratic equation.

12 a State the limitations of statistics.

OR

b Distinguish between graphs and diagrams.

13 a State the merits and demerits of arithmetic mean.

OR

b Find the quartile deviation:
391, 384, 591, 407, 672, 522, 777, 733, 1490, 2488.

14 a Distinguish between correlation and regression.

OR

b When $\bar{x} = 36$, $\bar{y} = 85$, $\sigma_x = 11$, $\sigma_y = 8$ and $r = 0.66$, obtain two regression equations.

15 a If the probabilities of solving a problem in statistics by A, B and C are respectively $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$, what is the probability that the problem will be solved?

OR

b Define normal distribution and state its applications.

SECTION -C (40 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks   (5 x 8 = 40)

16 a If P = 5,000, r = 5% and n = 6 years, then find
(i) Simple interest and amount   (ii) Compound interest and amount.

OR

b Find the sum of the following series

(i) 8 + 13 + 18 + ... Upto 23 terms   (ii) $3\frac{1}{4} + 5\frac{1}{2} + 7\frac{3}{4} + \ldots + 23\frac{1}{2}$.

17 a Discus the functions and uses of statistics.

OR

b The following data shows the marks of a certain number of students in the subject advanced accountancy.

Marks :	0-9	10-19	20-29	30-39	40-49	50-59	60-69
No. of students :	5	10	15	30	20	15	5

18 a Compute the mean and mode for the following data

Profit (Rs. in lakhs) :	10-20	20-30	30-40	40-50	50-60
No. of companies :	18	20	30	22	10

OR

b Compute Bowley's coefficient of skewness

No. of children per family :	0	1	2	3	4	5	6
No. of families :	7	10	16	25	18	11	8

19 a Find Karl Pearson's coefficient of correlation from the marks secured by 10 students in accountancy and statistics.

Marks in accountancy (x) :	45	70	65	30	90	40	50	75	85	60
Marks in statistics (y) :	35	90	70	40	95	40	60	80	80	50

OR

b Define regression analysis and discuss its uses.

20 a Discuss various approaches of probability.

OR

b State and prove Baye's theorem.

Z-Z-Z   END