

BCA (Honours) 3rd Semester Examination, 2019

Subject: Computer Application

Paper: BCA – 304 (Mathematics-III)

Time: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Group A

Answer any **four** questions:

5 × 4 = 20

1. What do you mean by conditional probability? Prove that
 $P(A \cup B) = P(A)P(B|A) + P(B)P(A|B)$, where A and B are two events such that
 $P(A) \neq 0$ and $P(B) \neq 0$.
2. What do you mean by statistically independent? Discuss with an example.
3. Find the quartiles of the following data:

No. of petals of a flower	30	31	33	37	38	40	42
Frequency	6	12	15	14	18	25	21

4. Define and do comparison of Mean, Median and Mode.
5. Discuss on different types of errors in numerical analysis.
6. Discuss on Trapezoidal rule.

Group B

Answer any **two** questions:

10 × 2 = 20

1. a) A bag contains 5 balls and it is not known how many of these are white. Two balls are drawn and are found to be white. What is the probability that all are white?
b) A speaks truth in 75% cases and B in 80% cases. In what percentage of cases are they likely to contradict each other while narrating the same incident? 5+5
2. Define Poisson distribution. The number of industrial injuries per working week in a particular factory is known to follow a Poisson distribution with mean 0.5. Find the probability that:
a) In a particular week there will be: less than two accidents and more than two accidents.
b) In a three week period there will be no accidents. 5+5
3. Discuss on Poisson and Binomial distribution.
4. Solve the equation $x^3 - 9x + 1 = 0$ for the root lying between 2 and 3, correct to 3-significant figures.