RAMAKRISHNA MISSION VIDYAMANDIRA

(A Residential Autonomous College)

Belur Math, Howrah

B.A./B.Sc. 1st Semester (July – December 2010)
Mid-Semester Examination, September 2010

Date: 08.09.2010	**Statistics (General)**	Full Marks 25
Time: 11 am – 12 noon		

*Answer **any five** questions with <u>at least two</u> questions from each group*

Group - A

1. Distinguish between :   5
    i)   Continuous Variable and Discrete Variable
    ii) Qualitative Data and Quantitative Data

2. Explain the concept of Histogram. Draw a histogram for the following frequency
    distribution: 5

Age (years):	10 – 20	20 – 40	40 – 70	70 – 80	Total
No. of individuals:	25	60	15	10	110

3. Show that the combined arithmetic mean of two groups lies between the two group
    means.   5

4. Show that if $y = a + bx$ and M is the mode of x then the mode of y is $a + bM$.   5

Group - B

5. State and prove Baye's Rule.   5

6. Prove that $P(A \cup B \mid C) = P(A \mid C) + P(B \mid C) - P(A \cap B \mid C)$.   5

7. Three boxes contain (5 Red, 10 Black); (10 Red, 5 Black) and (7 Red, 8 Black) balls
    respectively. One box is chosen at random and two balls are drawn from it. Both the
    balls turn out to be red. Find the probability that Box 3 was chosen.   5

8. The alphabets of the word "PROBABILITY" are randomly arranged. Find the
    probability that no two vowels come together.   5

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