



Ramakrishna Mission Vivekananda Educational and Research Institute

PO Belur Math, Howrah, West Bengal 711 202

School of Mathematical Sciences

Department of Computer Science

MSc BDA : Batch 2022-24, Semester I, Mid Exam

DA102: Basic Statistics

Dr. Sudipta Das

Student Name (in block letters):

Date: 07 November 2022

Student Roll No:

Max Marks: 60

Signature:

Time: 1.75hrs

Answers must be properly justified to deserve full credits.

1. (12 points)

The following data give the letter grades of 20 students enrolled in a statistics course.

$B, B, F, A, C, C, B, A, B, F, A, C, B, A, B, A, F, B, C, A$

1. Construct a bar graph.
2. Construct a divided bar diagram.
3. Construct a pie chart.

2. (12 points)

1. Construct a numerical series data of length six, such that the mean of the data lies outside of the one of the two extreme bars of the corresponding box plot.
2. Construct a numerical series data of length six, such that the median of the data lies outside of the one of the two extreme bars of the corresponding box plot.

3. (12 points)

The Median and Mode of the following wage distribution are known to be \$34.1 and \$34.55 respectively. Find the values of f_3, f_4, f_5 and construct a histogram.

Wages (in \$)	Frequency
00-10	6
10-20	18
20-30	f_3
30-40	f_4
40-50	f_5
50-60	14
60-70	2
Total	230

4. (12 points)

Let r be the range and s be the standard deviation of a set of observations x_1, x_2, \dots, x_n . Then prove that

$$s \leq r \left(\frac{n}{n-1} \right)^{\frac{1}{2}}.$$

5. (12 points)

Ten competitors in a beauty contest are ranked by three judges as follows:

	Competitors									
Judges	1	2	3	4	5	6	7	8	9	10
A	6	5	3	10	2	4	9	7	8	1
B	5	8	4	7	10	2	1	6	9	3
C	4	9	8	1	2	3	10	5	7	6

Discuss which pair of judges has the nearest approach to common tastes of beauty.

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This exam has total 5 questions, for a total of 60 points and 0 bonus points.
