



BRAINWARE UNIVERSITY

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Brainware University
398, Ramkrishnapur Road, Barasat
Kolkata, West Bengal-700125

Term End Examination 2023 Programme – B.Com.(BF)-Hons-2021 Course Name – Business Mathematics and Statistics Course Code - BCMC202 (Semester II)

Full Marks : 60	Time : 2:30 Hours
[The figure in the margin indicates full marks. Candidates as	e required to give their answers in their own words as

far as practicable.]

Group-A 1 x 15=15 (Multiple Choice Type Question) Choose the correct alternative from the following: (i) Mean absolute deviation is 5 and arithmetic mean is, calculate coefficient of mean absolute deviation a) 1.054 b) 0.045 d) 0.064 c) 0.054 (ii) At a grocery store, number of per day sold processed fruits cans in 15 days are 50, 70, 60, 40, 30, 20, 5, 150, 55, 75, 65, 45, 35, 25, 52 then select outliers in observations b) 5, 150 a) 50, 150 d) 150 c) 25, 70 (iii) Around central value of observations, extent to which values depart from normal distribution is classified as b) positive variation a) negative variation d) positive trailing c) skewness (iv) Choose the correct answer: In quartiles, central tendency median to be measured must lie in b) second quartile a) first quartile d) four quartile c) third quartile (v) Method used to compute average or central value of collected data is defined as b) measures of central tendency a) measures of positive variation d) measures of negative variation c) measures of negative Skewness (vi) Number of observations are 30 and value of arithmetic mean is 15 then calculate sum of all values b) 450 a) 15 d) 45 c) 200 (vii) At a manufacturing plant, unit of quantity manufactured in 8 days are 250, 320, 240, 210, 260, 330, 310, 260, Choose the mode b) 260 a) 210

c) 240

d) 250

(viii)	Median, mode, deciles and percenti	iles are all defined as measures of
	a) mathematical averages	b) population averages
	c) sample averages	d) averages of position
(ix)	select the correct answer: A diagona	al matrix in which all the diagonal elements are equal is a
	a) scalar matrix	b) column matrix
	c) unit matrix	d) None of these
(x)	select the correct answer: The Lende	er\'s are also known as
	a) Creditor\'s	b) Debtor\'s
	c) Buyer\'s	d) None of these
(xi)	select the correct answer: Under an	nuity due, payment is due at the
	a) beginning of the time	b) end of the time
	c) at the middle of the time	d) None of these
(xii)	select the correct answer: If A, B are	two matrices and K is a scalar then
	a) K(A+B) ≠KA+KB	b) K(A+B)=KA+KB
	c) K(A+B) <ka+kb< td=""><td>d) K(A+B)>KA+KB</td></ka+kb<>	d) K(A+B)>KA+KB
(xiii)	select the correct answer: Inverse of	a matrix exists if and only if
	a) determinant value exists.	b) determinant value is zero
	c) determinant value is one	d) determinant value is negative
(xiv)	Calculate The simple interest for Rs 1	.0000 for 2 years at 10&
	a) 200	b) 3000
	c) 4000	d) 2000
(xv)	is found that 80 % of the people water	e T.V., among the people who watch DD, ZEE and STAR TV., it ched DD, 22% watched Star TV, and 15 % o watched Zee. of people, who can watch all the three channels?
	a) 0.125	b) 0.085000000000001
	c) 0.15	d) Data insufficient
		Group-B
	57 Ch 13 CT Dans - 19 (5	Short Answer Type Questions) 3 x 5=15
2. def	ine and explain a histogram.	(3)
in o	e given distribution shows the nur one-day international cricket match	mper of runs scored by some top betomen of the service (2)

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Run Scored	Number of Batsman
3000-4000	4
4000-5000	18
5000-6000	9
6000-7000	7
7000-8000	6
8000-9000	3
9000-10000	1
10000-11000	1

Calculate the mode of the above distribution.

4. Calculate the median marks of students from the following distribution.

Marks	10 –	20 –	30 –	40 –	50 –	60 –	70 –
	20	30	40	50	60	70	80
Number of Students	7	10	10	20	20	15	8

- 5. Differentiate x^x with respect to x.
- 6. differentiate

$$h(x) = \frac{4x^3 - 7x + 8}{x}$$

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OR

differentiate

 $g(y) = (y-4)(2y+y^2)$

(3)

(3) (3)

7. Given the following data on monthly sales. Compute and plot a 3-month moving average against monthly (5)sales.

Month	Sales
Jan	125
Feb	145
Mar	186
Apr	131
May	151
Jun	192
Jul	137
Aug	157
Sep	198
Oct	143
Nov	163
Dec	204

8. Test scores of English and maths are given below. Compute Spearman's Rank correlation coefficient.

English	Maths	Rank-Eng	Rank-Math
56	66	9	4
75	70	3	2
45	40	10	10
71	60	4	7
61	65	6.5	5
64	56	5	9
58	59	8	8
80	77	1	1
76	67	2	3
61	63	6.5	6

9. The two regression lines involving the two variables x and y are Y = 5.6 + 1.2x and X = 12.5 + 0.6y. Find their Correlation Coefficient.

10. explain: mean deviation about mean is zero. state the assumptions.

11. Compare and contrast Fisher's Ideal Index with Laspeyre's and Paache's Index.

12. Calculate the standard deviation of the following values:

5, 10, 25, 30, 50.

Library Brainware University 398, Ramkrishnapur Road, Barasat Kolkata, West Bengal-70012' (5)

(5)

(5)

5

(5)

OR

(5)

Given the following frequency distribution, draw a histogram and frequency polygon.

Class Boundary	Frequency
10-20	3
20-30	7
30-40	4
40-50	4
50-60	2
