



Chhatrapati Shahu Ji Maharaj
University, Kanpur

Answer Script Details
Barcode 6126536

Roll No. 23070002068

Exam

BACHELOR OF BUSINESS ADMINISTRATION_DEC-202

Total Mark 32.50/37.50

Subject

F010102TA - BUSINESS STATISTICS

Question wise Mark Summary

Q.No Mark Q.No Mark Q.No Mark Q.No Mark

1A 5.5/6

1B NA/6

1C 6/6

1D NA/6

1E NA/6

1F NA/6

1G NA/6

2 NA/12

3 11/12

4 10/12

5 NA/12

Chhatrapati Shahu Ji Maharaj University Kanpur, Uttar Pradesh

PART-II

MARKS OBTAINED										
Q.	1	2	3	4	5	6	7	8	9	10
(a)										
(b)										
(c)										
(d)										
(e)										
(f)										
(g)										
(h)										
(i)										
(j)										
Total										
Total Marks in Figures									Max. Marks	
Total Marks in Words										



F 0 1 0 1 0 2 T
Paper Code

Signature of Evaluator

Date of Exam : 05.08.2024 Shift : J.O.T. Room No. : J.O.T.
 Business Statistics
 Paper Code: F010102T (Subject: Statistics Year-Sem: I)
 Name of Candidate: Priyanshu Singh
 Roll No. 23070002068

Signature of Candidate

 Signature of Investigator

 COE Facsimile

Course: BBA

Session: 2023-24 Year/Semester: I

Subject Name: Business Statistics

Medium: English Hindi

Paper Code: 010102T

Exam Date: 5022024

Name of Candidate: RIYANSHU SINGH

Father's Name: SHOK SINGH

Enrolment Number: CSJMA 23000125827

Candidate's Roll Number: 23070002068

Paper Code: F010102T

College Code: K N I 6 2

A	A	0	0	0
E	B	1	1	1
F	D	2	2	2
H	J	3	3	3
K	4	4	4	4
L	L	5	5	5
R	M	6	6	6
S	7	7	7	7
U	T	8	8	8
U	9	9	9	9
W				

Exam Centre Code: K N I 6 2

A	A	0	0	0
E	B	1	1	1
F	D	2	2	2
H	J	3	3	3
K	4	4	4	4
L	L	5	5	5
R	M	6	6	6
S	7	7	7	7
U	T	8	8	8
U	9	9	9	9
W				

Type of Exam

Regular Ex-Student
 Offline Back Paper Exam
 Private

ANSWER BOOKLET NO.

6126536

F 0 1 0 1 0 2 T
Paper Code



2	3	0	7	0	0	0	2	0	6	8
0	0	1	1	1	1	1	1	1	1	1
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9	9									

F	0	1	0	1	0	2	T
A	0	0	0	0	0	N	
B	1	1	1	1	1	P	
C	2	2	2	2	2	R	
E	3	3	3	3	3		
G	4	4	4	4	4		
I	5	5	5	5	5		
K	6	6	6	6	6		
M	7	7	7	7	7		
O	8	8	8	8	8		
Q	9	9	9	9	9		

Priyanshu
Signature of Candidate

Signature of Investigator

C S Facsimile

COE Facsimile

नोट- 1. परीक्षाओं को निर्दिष्टित किया जाता है कि आवरण पत्रों के कुछ भाग पर अधिक सभी विदेशी को आवश्यक पूर्णक करें।
 2. संकेत में धरी जाने वाली प्रतिक्रियाओं काभी सफ़्त से सुझाव दें। 3. गोपनी को काले या नीले बॉलपेन से भरा जायें।

INSTRUCTION TO THE CANDIDATE FOR FILLING PART-I

1. Read the instructions carefully given on the answer script and admit card.
2. Write Date of Exam, Shift, Paper Code & Name of Subject Correctly.
3. Write Name & Roll No. Correctly.
4. Write Semester & Branch Correctly.

INSTRUCTION TO THE CANDIDATE FOR FILLING PART-III

1. Use blue or black ball point pen for writing alphabets & numerals in boxes.
2. Carefully study the examples before you start marking.
3. As shown in the example below, blacken the circles completely.



4. Make no Stray marks on this sheet.

5. DO NOT WRITE OR MARK ON THE BAR CODE.

IN ORDER TO AVOID UFM (UNFAIR MEANS) :

1. The Roll No. and Answer Book no. found elsewhere or any other symbol found in the answer book will be treated as unfair means.
2. Any tempering of Bar Code and Booklet no shall be treated as Unfair Means.
3. Do Not bring the materials like slip of paper/mobile/digital diaries/ study material/ revision notes in examination hall. Possession of the mobiles/ digital diaries/electronic/digital watch and any other electronic gadget except memory less scientific calculator shall be considered as UFM case.
4. Do not keep or paste currency note in answer script it shall be consider as UFM.

अनुचित साधन से बचने हेतु :

1. उत्तर पुस्तिका के निर्देशित स्थान को धीमे-धीमे अनुक्रमिक रूप से उत्तरपुस्तिका का इस्तेमाल करी ज़ोर न डालते तथा कोई भी चिह्न न बनाते बसके उत्तर अनुचित साधन प्रयोग की पहिचान से जताते हैं।
2. उत्तर पुस्तिका के बरतते-वक्त उत्तर पुस्तिका बंद कर लेते जवाब करने पर अनुचित साधन प्रयोग माना जाएगा।
3. मोबाइल फोन में किए गए स्मार्ट वाच न रखें, जैसे कि लॉक हुए फोन में टूटफूट, मोबाइल, डिजिटल डायरी, डिजिटल वॉच, काली, फुलक चर सभी स्मार्ट जो अनुचित साधन को अलग-अलग जाते हैं। केवल स्मार्टवॉच डायनर में ही केबलेरी लेस साइबरनिक कैलकुलेटर से जाने को अनुमति है।
4. उत्तर पुस्तिकाओं में रुपये न चरने न ही उत्तर पुस्तिका में लिखावटें ऐसा करना अनुचित साधन प्रयोग की पहिचान से जताते हैं।

उत्तरपुस्तिकाओं की भरवाय

1. उत्तरपुस्तिका पर दिए गये निर्देशों को ध्यान से पढ़ें।
2. उत्तरपुस्तिका के दृश्य को ध्यान से देखें।
3. उत्तरपुस्तिका के पृष्ठों पर दोषों का ध्यान रखें।
4. उत्तरपुस्तिका पर अपने अनुक्रमिक को उचित रूप से भरवाय।
5. उत्तरपुस्तिका पर अपने उत्तरपुस्तिका ID का ध्यान से भरवाय।
6. उत्तरपुस्तिका पर चिह्न भरवाय।
7. उत्तरपुस्तिका के पृष्ठों की संख्या देखें। अगर उत्तरपुस्तिका में पृष्ठ (1-24) के कम हो या कटे हुए हों, शुरू होने से पूर्व दूसरी उत्तरपुस्तिका से लें।
8. उत्तरपुस्तिका पर दोष, यदि उत्तरपुस्तिका के उत्तरपुस्तिका, उत्तरपुस्तिका का नाम तथा उत्तरपुस्तिका में कोई त्रुटि है तो उत्तरपुस्तिका होने से 30 मिनट के अंदर कक्षा निर्देशिका को जानकारी मुचित करें, उसके बाद उत्तरपुस्तिका उत्तरपुस्तिका नहीं की जायेगी।
9. उत्तरपुस्तिका के उत्तरपुस्तिका का प्रयोग न करें।
10. ही उत्तरपुस्तिका उत्तरपुस्तिका नहीं दिया जायेगा।

INSTRUCTION TO THE CANDIDATE

1. Read the instructions carefully given on the Question Paper, Admit Card & Answer Script.
2. Do not write anything on back side of the cover page.
3. Write on both sides of pages of answer book.
4. Do not write anything on question paper except Roll Number.
5. Write Paper Code & Question Paper Id carefully.
6. CHECK the number of pages (1-24) or any other kind of damage in your answer script, if found than change the answer script immediately before the commencement of examination.
7. CHECK the Question Paper for any kind of discrepancy e.g. Subject Code, Name, and Question of the Question Paper during first THIRTY MINUTES of commencement of the exam, so that it can be corrected in TIME. After that no corrections shall be entertained by the university.
8. Do not use pencil for answering the question.
9. Write status correctly e.g. those appearing in carry over papers should fill in status as Carry Over. Those appearing as Ex- Students should fill in status as ex.
10. No supplementary answer book & graph paper will be provided.

INSTRUCTION TO THE CANDIDATE FOR FILLING PART-IV

1. Use blue or black ball point pen for writing alphabets & numerals in Boxes.
2. Use blue or black ball point pen for filling the circles.

	1	8	1	5	4	3	2	1	6	9
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0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9

Note- If your Roll No. is of 10 digits. Please leave first three columns.



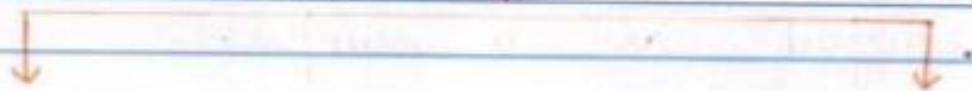
Section - 'A'

Answer - 1 (A)

Sampling

Sampling refers to selecting a part of population that represents that population. This part is known as sample and the process of selecting the sample is known as 'sampling'.

Sampling is of two types -



Probability
Sampling Method

Non-Probability
Sampling Method

Probability Sampling Method → Probability sampling method refers to where there are equal chances of each part of population to get selected as a sample. Sample is selected randomly.

P.T.O



Types of Probability Sampling Method -

- 1). Random Sampling.
- 2). Cluster Sampling.
- 3). Systematic Sampling.
- 4). Stratified Sampling.

1). **Random Sampling** - Random sampling refers to when each sample has equal probability to get selected.

2). **Cluster Sampling** - In this sampling method small groups are formed and one random group is selected as a sample.

3). **Systematic sampling** - Systematic sampling refers to when sample is selected in a systematic way.

4). **Stratified Sampling** - Stratified sampling is similar to cluster sampling. In this method, various stratas are formed and samples are selected from them. Stratified sampling contains more homogeneity.



Answer - 1(B)

Correlation

Correlation shows the relationship between two variables. It signifies that if there is a change in one variable then it will lead to a corresponding change in other variable.

It ranges from -1 to $+1$.

Types of Correlation -

There are various types of correlation, such as -

- 1). Simple Correlation - When there is a correlation between two variables, it is known as simple correlation.
Ex - Height and Weight.
- 2). Complex Correlation - When there is a correlation between more than 2 variables, it is known as complex correlation.
Ex - Crop production.



3). Positive Correlation - When there is a change in both the variable in same direction, it is known as positive correlation.

Ex - Height \uparrow - Weight \uparrow

4). Negative Correlation - When there are change in variables but in opposite direction, it is known as negative correlation.

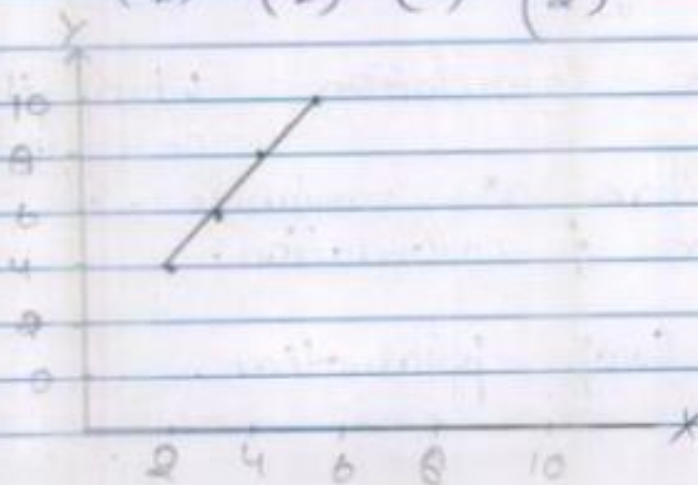
Ex - Rent Price \uparrow , Demand \downarrow

5). Linear Correlation - When the proportion of both the variables is same, it is known as linear correlation.

Ex -

X	2	3	4	5
Y	4	6	8	10

$(\frac{1}{2})$ $(\frac{1}{2})$ $(\frac{1}{2})$ $(\frac{1}{2})$



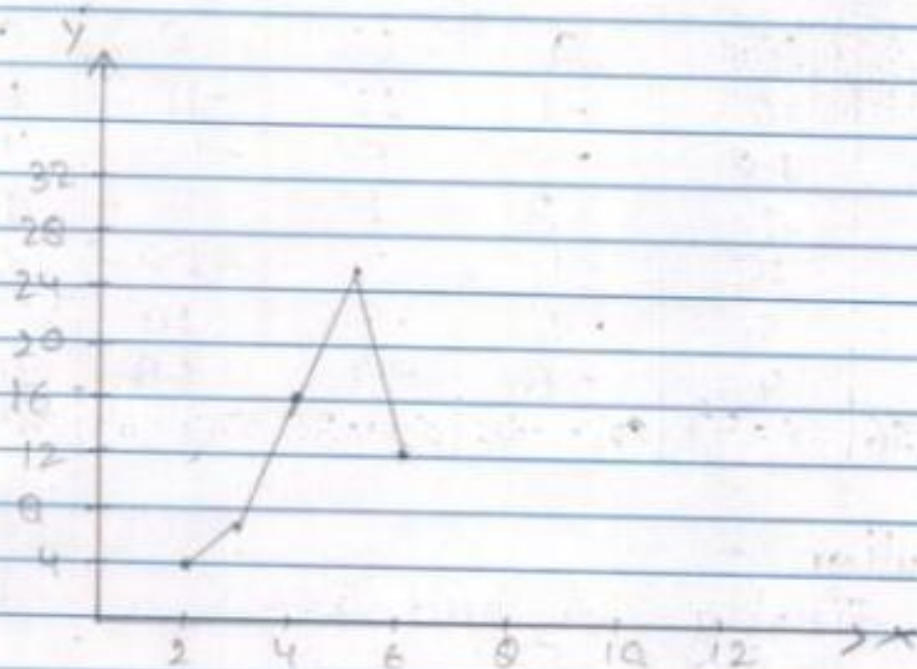


6). Non-Linear Correlation - When the proportion of both the variables is not equal, it is known as non-linear correlation.

Ex -

X	2	3	5	6
Y	4	16	25	12

$(\frac{1}{2})$ $(\frac{1}{3})$ $(\frac{1}{4})$ $(\frac{1}{5})$ $(\frac{1}{6})$...





Section - B

Answer - 3

Karl Pearson's Coefficient of Correlation -

X	Y	$x(x-\bar{x})$	$y(y-\bar{y})$	xy	x^2	y^2
11	20	0	15	0	0	169
10	18	-1	11	-11	1	121
9	14	-2	5	-10	4	49
8	8	-3	1	-3	9	1
7	10	-4	3	-12	16	9
6	5	-5	-2	10	25	4
5	4	-6	-3	18	36	9
$\Sigma x = 56$	$\Sigma y = 77$	$\Sigma x(x-\bar{x}) = -21$	$\Sigma y(y-\bar{y}) = -30$	$\Sigma xy = 64$	$\Sigma x^2 = 91$	$\Sigma y^2 = 339$

Solution -

Firstly We need \bar{x}

$$\bar{x} = \frac{\Sigma x}{N}$$

$$\bar{x} = \frac{56}{7}$$

$$\bar{x} = 8$$

Now

$$\bar{y} = \frac{\Sigma y}{N}$$



Paper Code-

F010102T(A)



7

$$\bar{y} = \frac{77}{7}$$

$$\bar{y} = 11$$

$$r = \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sum y^2}}$$

64

$$\sqrt{91 \times 338}$$

 \Rightarrow

$$\frac{64}{175.37}$$

$$\Rightarrow 0.36$$

Answer.

Karl Pearson's of correlation is

$$r = 0.36$$

Answer.

?

PTO



Answer - 4

Dispersion

Measures of dispersion are non-negative real numbers that help to measure the spread of data about central value.

Measures of dispersion are of two types -



① Absolute Measure of Dispersion

It gives the results on the numbers in which real data is given. Absolute measure of dispersion is based on -

- 1) Based on few items.
- 2) Based on all items.



1) Based on few items -

↓
Range

↓
Inter-Quartile range.

2) Based on all items

↓
Mean Deviation

↓
Standard deviation.

- Range - Range is the difference between the largest number of the data set and the smallest number of the data set.

$$[\text{Range} = L - S]$$

- Inter Quartile Range - Quartile is a quantile that divides the whole data-set into 4 equal parts. It is of 3 types -

q_1 = Lower quartile. Consists of 25% of data set.

q_2 = Median. Consists of 50% of data set.

q_3 = Upper quartile. Consists of 75% of data set.



$$q_1 = L + \frac{\frac{N}{4} \times C.F}{f} \times i$$

$$q_2 = L + \frac{\left(2 \times \frac{N}{4}\right) \times C.F}{f} \times i$$

$$q_3 = L + \frac{3 \left(\frac{N}{4}\right) \times C.F}{f} \times i$$

- Mean deviation - It is arithmetic mean of data set. In mean deviation we ignore the signs.

$$M_0 = \frac{\sum |DI|}{N}$$

Where, $|DI| = x - \bar{x}$
or

$|DI| = Md - \bar{x}$
or

$M_0 - \bar{x}$

$N =$ No. of observations.

- Standard deviation - It is the arithmetic square root of arithmetic mean of all the items of data set.



In Standard deviation, we do not ignore the signs.

$$SD = \sqrt{\frac{\sum x^2}{N}}$$

Here, $x = \pm$ only.

We calculate SD from mean only.

(2) Relative Measure of Dispersion

Coefficient of

① Range = $\frac{L-S}{L+S}$

Coefficient of

② MD = $\frac{MD}{\text{Mean / Median / Mode}}$

③ IQR = $\frac{q_3 - q_1}{q_3 + q_1}$

④ $SD = \frac{SD}{\text{Mean}} \times 100$

End.



Paper Code

F010102T(A)



12

Do Not Write anything in this Portion

X



Paper Code

F 0 1 0 1 0 2 T (A)



13

X



Paper Code

F 0 1 0 1 0 2 T (A)



14

Do Not Write anything in this Portion

X



Paper Code

F O (0 1 0 2 T (A)



15

X



Paper Code

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16

Do Not Write anything in this Portion

X



Paper Code

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17

X



Paper Code

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18

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Paper Code

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19

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Paper Code

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20

Do Not Write anything in this Portion

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Paper Code

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21

X



Paper Code

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22

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23

X



Paper Code

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24

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