



## GIET UNIVERSITY, GUNUPUR - 765022

### B. B. A (Second Semester Regular) Examinations, May - 2024 23BBAPC12004 - Business Statistics

Time: 3 hrs

Maximum: 60 Marks

**(The figures in the right hand margin indicate marks.)**

**PART - A****(2 x 10 = 20 Marks)**Q.1. Answer **ALL** questions

- |   |      |                 |
|---|------|-----------------|
|   | CO # | Blooms<br>Level |
| a. List out the parts of a table.   | CO1  | K1              |
| b. 50 schools decided to plant 100 tree saplings in their gardens on world environment day. Represent the given data in the form of frequency distribution and find the number of schools that are able to plant 50% of the plants or more?<br>95, 67, 28, 32, 65, 65, 69, 33, 98, 96, 76, 42, 32, 38, 42, 40, 40, 69, 95, 92, 75, 83, 76, 83, 85, 62, 37, 65, 63, 42, 89, 65, 73, 81, 49, 52, 64, 76, 83, 92, 93, 68, 52, 79, 81, 83, 59, 82, 75, 82 | CO1  | K3              |
| c. Highlight the advantages of arithmetic median.   | CO2  | K1              |
| d. Highlight the advantages of arithmetic mode.   | CO2  | K1              |
| e. Write a short note mean deviation.   | CO3  | K1              |
| f. Write a short note on standard deviation.  | CO3  | K1              |
| g. Discuss about regression equation Y on X.  | CO4  | K1              |
| h. Write a short note on Spearman's rank correlation.   | CO4  | K1              |
| i. Write a short note on seasonal trend with example.   | CO5  | K1              |
| j. Highlight the advantages of Moving Averages.   | CO5  | K1              |

**PART - B****(8 x 5 = 40 Marks)**Answer **ALL** the questions

- |   |       |      |                  |
|---|-------|------|------------------|
|   | Marks | CO # | Bloom<br>s Level |
| 2.a Briefly describe about Classification of data with suitable examples.   | 8     | CO1  | K2               |
| (OR)  |       |      |                  |
| b. Draw the two ogives for the following frequency distribution of the weekly wages of (less than and more than) number of workers. | 8     | CO1  | K3               |

Weekly wages	Number of workers	Weekly wages	Number of workers
0-10	31	50-60	62
10-20	35	60-70	28
20-30	41	70-80	15
30-40	48	80-90	6
40-50	54	90-100	5

- |   |   |     |    |
|---|---|-----|----|
| 3.a Calculate harmonic mean from the following data | 8 | CO2 | K4 |
|---|---|-----|----|

Variable	Frequency	Variable	Frequency
10-13	8	25-28	54
13-16	15	28-31	36
16-19	27	31-34	18
19-22	51	34-37	9
22-25	75	37-40	7

(OR)

- b. From the following data of weight of 122 persons determine the modal weight. 8 CO2 K4

Weight (lbs)	No. of persons	Weight (in lbs)	No. of persons
100-110	4	140-150	33
110-120	6	150-160	17
120-130	20	160-170	8
130-140	32	170-180	2

- 4.a The table below gives the weight measurements of 200 castings: 8 CO3 K4

Weight in Kg	No. of castings	Weight in Kg	No. of castings
80-90	2	140-150	37
90-100	5	150-160	29
100-110	13	160-170	11
110-120	20	170-180	3
120-130	30	180-190	1
130-140	49		

Calculate mean and standard deviation.

(OR)

- b. Calculate Karl Pearson's coefficient of Skewness from the following data: 8 CO3 K4

Weight (in lbs.)	No. of Students	Weight (in lbs.)	No. of Students
Below 99	1	150-159	65
100-109	14	160-169	34
111-119	66	170-179	12
120-129	122	180-189	5
130-139	145	190-199	2
140-149	121	200 and over	2

- 5.a Write regression equations of X on Y and of Y on X for the following data 8 CO4 K4

X	45	48	50	55	65	70	75	72	80	85
Y	25	30	35	30	40	50	45	55	60	65

(OR)

- b. Ten entries are submitted for a competition. Three judges study each entry and list the ten in rank order. Their rankings are as follows: 8 CO4 K4

Entry	A	B	C	D	E	F	G	H	I	J
Judge 1	9	3	7	5	1	6	2	4	10	8
Judge 2	9	1	10	4	3	8	5	2	7	6
Judge 3	6	3	8	7	2	4	1	5	9	10

Calculate the appropriate rank correlation to help you answer the following questions:

(i) Which pair of judges agrees the most?

(ii) Which pair of judges disagrees the most?

- 6.a Calculate the trend values by the method of least square. Also calculate the increase in sales and trend value for 2022. 8 CO5 K4

Year :	2011	2012	2013	2014	2015	2016	2017
Sales (₹ lakhs) :	125	128	133	135	140	141	143

(OR)

- b. Calculate trend values from the following data relating to the production (in mm lb) of tea in India by the *least square method*: 8 CO5 K4

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Production	464	515	518	467	502	540	557	571	586	612

Also calculate the increase in sales and trend value for 2025.

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