No. of Printed Pages : 7 **MSTL–001(Set-I)**

POST GRADUATE DIPLOMA IN APPLIED STATISTICS (PGDAST)

Term-End Examination

December, 2024

MSTL–001 : BASIC STATISTICS LAB

Time : 3 Hours *Maximum Marks : 50*

Note : *(i) Attempt any **two** questions.*

(ii) Solve the questions in Microsoft Excel.

(iii) Use of "Formulae and Statistical Tables Booklet for PGDAST" is allowed.

(iv) Mention necessary steps, hypotheses, interpretations, etc.

1. A random sample of 30 families was selected to study the number of hours spent in watching television by the families on Sundays. The data on watching television for one month are given in the following table : 5+4+3+7+6

Table : Television Viewing Hours

S. No.	Hours
1	20
2	04
3	20
4	28
5	08
6	20
7	08
8	12
9	16
10	20
11	08
12	08
13	20
14	12
15	14
16	14
17	14
18	08
19	08
20	20

21	20
22	08
23	08
24	18
25	15
26	14
27	20
28	14
29	22
30	13

(i) Compute class-intervals of suitable width and construct continuous frequency distribution.

(ii) Compute the mean, median, first quartile and third quartile.

(iii) Compute variance and coefficient of variation.

(iv) Compute moments, skewness and kurtosis.

(v) Draw Box-plot of the data.

2. (a) The data of 15 women were collected to monitor their systolic blood pressures. The age of the women and the blood pressure in

mm/Hg. recorded by the doctor are given in the following table : 15

S. No.	Age	Blood Pressure
1	57	148
2	41	126
3	73	161
4	50	140
5	41	120
6	64	152
7	59	154
8	67	150
9	43	141
10	37	114
11	50	146
12	54	149
13	46	127
14	64	150
15	35	117

Compute the rank correlation coefficient between the women's age and blood pressure.

(b) A company conducted a survey and found out that 75% of its employees cannot live without their Smartphone's. To check this statement, an analyst took a sample of 40 employees and obtained the following results : 10

S. No.	Live without Smartphone	S. No.	Live without Smartphone
1	No	21	No
2	No	22	No
3	No	23	No
4	No	24	Yes
5	No	25	Yes
6	Yes	26	No
7	Yes	27	No
8	No	28	No
9	Yes	29	No
10	Yes	30	Yes
11	No	31	No
12	No	32	No
13	No	33	No
14	No	34	Yes
15	No	35	No

16	No	36	No
17	No	37	No
18	Yes	38	No
19	Yes	39	No
20	Yes	40	Yes

Test the hypothesis at 5% level of significance to check the company's claim.

3. An experiment was conducted to test the effect of six types of seeds (A, B, C, D, E and F) on the yield of a crop. In this regard, experimental field was divided into five (5) blocks. The yields (in kg) obtained are reported in the following tables : 25

Block 1			Block 2		
C 295	E 273	A 307	D 262	B 319	E 263
D 299	B 309	F 262	A 281	F 281	C 298

Block 3			Block 4		
D 259	F 256	B 305	D 308	F 266	A 260
A 285	C 285	E 310	C 287	B 285	E 307

Block 5		
A 319	D 308	B 273
F 257	C 306	E 276

Analyse the design at 5% level of significance by assuming the effect of each seed and each block are approximately normally distributed with equal variances. Also, do the pair wise analysis, if needed.

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