POST GRADUATE DIPLOMA IN APPLIED STATISTICS (PGDAST)

Term-End Examination

June, 2017

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MSTL-001/S1 : BASIC STATISTICS LAB SET-1

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, interpretation, etc.*

1. (a)   There are several methods for calculating fuel economy. The following table indicates the mileage (in km/litre) as calculated by the owners and by the current Government Standards for 9 different makes of a company :

Makes	1	2	3	4	5	6	7	8	9
Owner	29	30	55	55	100	34	48	66	74
Government	33	35	54	68	96	37	57	66	89

(i)   Compute the covariance and coefficient of correlation.

(ii)   Represent the above data using a suitable diagram.

(iii) Compute the coefficients of skewness and kurtosis and interpret.   *2+5+8*

2. **(a)** Data of egg consumption in 60 families are recorded in the following table. Construct a discrete frequency distribution for the data.

Family No.	Consumption of eggs	Family No.	Consumption of eggs	Family No.	Consumption of eggs	Family No.	Consumption of eggs
1	7	16	3	31	2	46	4
2	5	17	9	32	8	47	6
3	1	18	8	33	3	48	7
4	9	19	6	34	8	49	4
5	6	20	4	35	5	50	4
6	6	21	8	36	6	51	7
7	5	22	7	37	8	52	5
8	6	23	9	38	3	53	4
9	9	24	5	39	9	54	8
10	6	25	7	40	6	55	8
11	7	26	3	41	7	56	6
12	6	27	7	42	5	57	3
13	1	28	9	43	6	58	6
14	6	29	6	44	2	59	3
15	6	30	6	45	5	60	5

Also draw a frequency bar graph for the constructed discrete frequency distribution. *10*

(b) A group of 20 children was tested to find out how many digits they would repeat from memory after hearing them once. Then they were given practice for the test and retested after one week. The results obtained before and after the practice were as follows :

Child No.	Recall Before (X)	Recall After (Y)	Child No.	Recall Before (X)	Recall After (Y)
1	6	8	11	8	8
2	4	4	12	5	6
3	5	8	13	5	7
4	8	8	14	4	4
5	4	4	15	6	8
6	2	5	16	4	4
7	3	5	17	2	3
8	5	5	18	2	4
9	2	6	19	6	6
10	7	8	20	4	5

Assuming that the memories of the children before and after practice follow normal distributions, does the practice improve the performance of the children at 5% level of significance ? *15*