SARDAR PATEL UNIVERSITY
BBA (ITM) SEMESTER-II (3-YEARLY) EXAMINATION
SATURDAY, 30th MARCH 2019
02:00 P.M. TO 04:00 P.M.
UM02DBBI22: BUSINESS STATISTICS

Total Marks: 60

Q.1 **[a]** Explain secondary data. List out sources of secondary data.   07

[b] Following data show production of wheat (in million tons) for the 60 districts. Prepare a   08
frequency distribution with inclusive type of classes that containing 21-25 as one of the
class.

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05  15  25  45  27  33  26  28  15  29  16  39  42  12  18
35  37  41  26  33  35  27  32  18  19  23  26  29  28  24
19  43  22  31  27  34  31  15  25  34  23  36  11  09  08
45  08  13  39  25  31  12  18  14  33  23  32  24  24  17
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OR

Q.1 **[a]** Explain primary data and its methods.   07

[b] The following are the body weights (in kg) of 60 persons used in a study of health   08
problem.

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136  92   115  118  121  137  132  120  104  129  118  111
125  119  115  107  129  87   108  110  133  124  104  129
135  126  127  103· 110  126  118  88   104  113  103  110
137  120  95   146  126  119  119  105  132  95   136  136
126  118  100  113  106  125  117  102  146  148  113  106
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Construct the frequency distribution table taking one of the class as 125-135 with class
interval of 10. Also prepare more than and less than cumulative frequency distribution

Q.2 **[a]** The weekly production of two products X and Y were recorded as given below: 07

Product X	15	19	12	30	25	22	31
Product Y	59	75	28	63	27	28	56

Calculate coefficient of variation and find out which of the two shows greater fluctuation
in production.

[b] Find Median, 1st and 3rd Quartiles and quartile deviation of the following frequency   08
distribution.

Class	5-15	15-25	25-35	35-45	45-55	55-65	65-75	75-85
Frequency	7	16	22	37	45	30	12	1

OR

Q.2 **[a]** Find the missing frequencies of the following frequency distribution if N=100 and   07
Mode = 24. Also find third quartile from the obtained frequency distribution.

Turnover (Rs. '000)	0-10	10-20	20-30	30-40	40-50
No. of firms	14	?	27	?	15

①

(P.T.O)

[b] Find Mean and Standard deviation for the following frequency distribution.   08

Sales	100-110	110-120	120-130	130-140	140-150	150-160	160-170	170-180	180-190	190-200
No. of companies	3	8	12	35	45	18	13	9	6	3

Q.3 [a] Distinguished correlation and regression. Write properties of correlation coefficients.   07

[b] Calculate Karl Pearson's coefficient of correlation for the following data of income and   08
saving.

Income ('000)	15	18	24	17	27	22	25	34	45	40
Saving ('000)	5	13	17	4	10	10	8	15	22	20

OR

Q.3 [a] Calculate spearman's coefficient of rank correlation for the data of scores in   07
psychological tests (x) and arithmetical ability (y) of 10 children.

x	100	104	102	101	105	99	98	96	93	98
y	101	102	100	98	99	96	104	94	97	94

[b] Find regression coefficients and regression lines for the following data. Also estimate the   08
value of y when $x = 78$.

x	0	10	20	30	40	50	60	70
y	51	61	67	72	73	82	83	88

Q.4 [a] Write the properties of normal distribution.   07

[b] The probability of defective hard disks is 1/4. If 4 disks are selected at random, what is   08
the probability that,

   (a) Exactly one hard disk is defective?

   (b) At least one hard disk is defective?

   (c) Not less than two hard disks are defective?

OR

Q.4 [a] The probability that a match stick is found without head is 0.01. Each match box contains   07
50 sticks. Using Poisson distribution, find the probabilities that boxes having, 0, 1 and 2
sticks without heads. $[e^{-0.5} = 0.6065]$

[b] The daily wages of 1000 workmen are normally distributed around a mean of Rs. 70 and   08
with standard deviation of Rs. 5. Estimate the number of workers whose daily wages will
be (i) between Rs. 73 and 76 (ii) between Rs. 67 and 72 and (iii) less than Rs. 67.

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