

SARDAR PATEL UNIVERSITY
BBA (ITM) SEMESTER-II (3-Years) EXAMINATION
Friday, 6th April, 2018
02:00 P.M. to 04:00 P.M.
UM02EBBI03: Business Statistics

Total Marks: 60

Q.1 [a] What is primary data? Explain questionnaire method and interview method of data collection. **07**

[b] From the following data prepare a frequency distribution with inclusive type of classes and containing 55-64 as one of the class. Also find how many observations above 74? **08**

28	24	76	45	27	23	68	22	58	37
59	46	29	37	28	42	61	53	21	15
30	55	23	50	61	38	33	44	55	15
64	56	54	15	34	35	48	78	68	82
67	54	28	28	46	54	15	22	44	28

OR

Q.1 [a] Distinguished primary and secondary data. List out sources of secondary data. **07**

[b] Following data show observations on the number of customers used ATM during the noon hour on 50 consecutive workdays. **08**

30	45	48	55	39	25	31	12	18	21	59	51	33
35	37	41	46	33	51	37	58	58	19	23	26	29
19	43	22	31	47	34	31	15	25	34	68	46	51
43	44	10	38	38	57	36	35	37	58	58		

Prepare a frequency table with classes 10-19, 20-29, 30-39 ... and also find cumulative frequency for the obtained distribution.

Q.2 [a] The weekly sales of two products A and B were recorded as given below: **07**

Product A	15	19	12	30	25	22	31
Product B	59	75	28	63	27	28	56

Find out which of the two shows greater fluctuation in sales.

[b] A survey was conducted to determine the lifetime (in years) of 120 automobiles. The result of such a survey is as follows. **08**

Lifetime	130-135	135-140	140-145	145-150	150-155	155-160	160-165	165-170
No. of automobiles	2	9	14	25	30	21	13	6

Find Median, Mode and Quartile deviation for the data.

OR

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

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

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

Class interval	100-110	110-120	120-130	130-140	140-150	150-160	160-170	170-180	180-190	190-200
Frequency	4	7	15	24	40	25	16	10	6	3

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

- [b] Following data show age and playing habits of the students. Calculate Karl Pearson's coefficient of correlation. 08

Age (X)	15	16	17	18	19	20	21	22
% of Regular Players (Y)	92	85	60	67	40	27	13	10

OR

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

x	105	104	102	101	100	99	98	96	93	92
y	101	103	100	98	95	96	104	92	97	94

- [b] Given the following value of x and y. 08

x:	12	10	14	18	16	15	17
y:	9	10	8	9	7	5	6

Obtain:

- The regression coefficient of y on x and x on y.
- Coefficient of correlation between x and y.
- Estimate value of y when x = 10 and x when y = 6.

- Q.4 [a] Define Binomial and Poisson distribution and write its mean and variance. 07

- [b] An insurance salesman sells policies to five men, all of identical age and good health. According to the actuarial tables, the probability that a man of this particular age will be alive 30 years hence is $\frac{2}{3}$. Find the probability that in 30 years (i) all five men (ii) at least one man (iii) at most three men, will be alive. 08

OR

- Q.4 [a] A car hire firm has two cars which it hires out day by day. The numbers of demands for a car on each day is distributed as a Poisson variate with mean 1.5. Calculate the proportion of days on which (i) Neither car is used (ii) some demand is refused. [value of $e^{-1.5} = 0.2231$]. 07

- [b] The daily wages of 1000 workmen are normally distributed around a mean of Rs. 70 and with standard deviation of Rs. 5. Estimate the number of workers whose daily wages will be. (i) between Rs. 70 and 72 (ii) between Rs. 69 and 72 (iii) more than Rs. 75 (iv) less than Rs. 63. 08

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