C7J

SARDAR PATEL UNIVERSITY
BBA (GENERAL) SEM-III (CBCS) EXAMINATION (NC)

Date: 9-1-2021   **STATISTICS FOR MANAGEMENT-1**   **Total marks: 60**
Saturday   **Subject code: UM03DBBA22**   Time: 10:00 am to 12:00 pm

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Note: (1) Only simple calculator is allowed.

      (2) Each question has equal mark.

      (3) Answers any four questions from the following eight questions.

Q -1 (A) Explain the difference between primary data and secondary data.   (7)

    (B) From the following data find mean and median: (8)

Class	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80
Frequency	15	25	20	12	8	5	3

Q-2 (A) What is secondary data? Explain sources of secondary data.   (7)

    (B) Frequency distribution of daily wages of workers of a factory is as follows. Find Quartile -Deviation.   (8)

Wages	50-59	60-69	70-79	80-89	90-99	100-109	110-119
Workers	10	23	37	48	45	25	12

Q -3(A) What is correlation? Explain types of correlation.   (7)

    (B) Find Karl Pearson correlation coefficient of the following data: (8)

X	150	160	162	165	167	164	163	160	165	154
Y	157	159	160	167	166	164	162	165	165	155

Q-4 (A) Calculate Spearman's rank correlation of the following data: (7)

x	60	80	81	50	75	88	95	70
y	110	140	142	100	120	134	150	115

    (B) The following data are obtained for two variable x and y: (8)

$$n=25 \ , \ \sum x = 125, \ \sum y = 100 \ , \sum x^2 = 650 \ , \ \sum y^2 = 460 \ , \ \sum xy = 508$$

It was however discovered at the time of checking that two pairs were wrongly taken as (6, 14) and (8,6) instead of (8,12) and (6,8). Prove that the correct value of correlation should be 0.67.

Q -5 (A) What is regression coefficient? Explain the properties regression coefficient. (7)

(B) The Following values are available for the variables x and y: (8)

	X	Y
Mean:	10	90
S D	3	12

Correlation coefficient = 0.8

Obtain two regression lines.

Q – 6 (A) Find the equations of regression lines of the following data: (7)

X	62	72	98	76	81	56	76	92	88	49
y	112	124	131	117	132	96	120	136	97	85

(B) The regression equations are 10y = 8x + 66 and 40x = 18y +214 find (1) Mean value of x and y (2) correlation coefficient between x and y. (8)

Q- 7 (A) What is time series analysis? Explain the component of time series. (7)

(B) Find trend by 3 yearly moving averages. Also find short term variations for the Following time series data: (8)

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
sale	230	214	222	248	238	228	272	256	264	284	268	288

Q- 8 (A) Find seasonal indices of the following data of time series: (7)

Year	Q1	Q2	Q3	Q4
2007	37	41	33	35
2008	37	39	36	36
2009	40	41	33	31
2010	33	44	40	40

(B) Fit a straight line trend to the following data: (8)

Year	1975	1980	1985	1990	1995	2000
Production (in thousand tons)	10	13	15	20	24	30

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