[11] No. of printed pages : 4

SARDAR PATEL UNIVERSITY
FY BBA (II SEM.) (FT) (CBCS) EXAMINATION
Wednesday, 18th April 2012
11.00 am to 1.00 pm
UM02CBBF04: Business Statistics

Total Marks: 60

Note: (1) Figures to the right indicate marks.
(2) Graph papers should be provided on request.

Q.1

(a) Define Statistics and write its limitations. [04]

(b) From the following information find missing frequency if given that median is 50. Then find mode [05]

Class	0-20	20-40	40-60	60-80	80-100	Total
Freq.	14	x	27	y	15	100

(c) Find mean deviation about mean and Quartile deviation using following information: 37, 45, 52, 46, 56, 40, 47, 55, 43, 59 [06]

[OR]

Q.1

(a) From following information find Range and C. V. [05]

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Freq.	4	12	18	22	21	19	10	13	1

(b) From the following information [05]

	Village	
	A	**B**
No. of people	600	500
Avg. income	175	186
Var. of income	100	81

Find:
(i) In which village amount of income is more?
(ii) In which village, the variation in income is greater?
(iii) What is total income or both for village put together.

(c) Define "Measure of central tendency". State various measure of it and explain any one. [05]

Q.2

(a) Define LPP and write its meaning. [05]

(b) Solve following LPP by Graphical Method. [05]

$$Max\, Z = 13x + 15y$$
$$subject\ to$$
$$2x + 7y \le 110$$
$$x + y \le 50$$
$$x + y \le 25$$
$$x, y \ge 0$$

(c) A question paper of mathematics is divide in two section A and B. Each question of section A is of 10 marks and requires 15 minute to solve it. While each question of section B is of 15 marks and requires 25 minute to solve it. The question paper contains the instruction that atleast 2 questions from each section are to be attempted and maximum 8 questions are to be answered from whole question paper. The time duration of the question paper is two and half hours. How many questions from each section to be answered to get maximum marks. [05]

[OR]

Q.2

(a) Write assumption and limitation of Linear Programming. [05]

(b) Solve following LPP by Graphical Method. [05]

$$Min\, Z = x + y$$

$$subject\ to$$

$$5x + 10y \le 50$$

$$x + y \ge 2$$

$$y \le 4$$

$$x, y \ge 0$$

(c) Two machines A and B are used in manufacturing footballs and volleyballs. The machine A is to be used for 2 minutes and B is used for 3 minutes to make football while the machine A is to be used for 4 minutes and B is used for 2 min. to make volleyball. Each machine can be used for atmost 2 hours a day. Each football gives profit of Rs. 5 and each volleyball gives profit of Rs. 6. How many footballs and volleyballs should be manufactured to get maximum profit? [05]

Q.3

(a) Solve following T. P.

(i) North West Corner rule [03]

(ii) VAM method [04]

	W	**X**	**Y**	**Z**	**Supply**
A	6	4	1	5	14
B	8	9	2	7	16
C	4	3	6	2	5
Demand	6	10	15	4	

(b) Solve following Cost Matrix. [03]

	I	**II**	**III**	**IV**
A	35	30	41	57
B	47	32	53	45
C	39	42	38	54
D	31	35	50	45

(c) Solve following maximal A. P. [05]

	I	II	III	IV	V
A	5	11	10	12	4
B	2	4	6	3	5
C	3	12	5	14	6
D	6	14	4	11	7
E	7	9	8	12	5

[OR]

Q.3

(a) Solve following T. P.
by (i) North West Corner Method [03]
(ii) Least Cost Method [04]

	W	X	Y	Z	Supply
A	19	14	23	11	11
B	15	16	12	21	13
C	30	25	16	39	19
Demand	6	10	12	15	

(b) Solve following minimal A. P. [05]

	I	II	III	IV
A	0	7	14	21
B	12	17	22	27
C	12	17	22	27
D	18	22	26	30

(c) Solve following maximal A. P. [03]

	I	II	III	IV
A	10	12	19	11
B	5	10	7	8
C	12	14	13	11
D	8	15	11	9

Q.4

(a) Define Time Series. State its uses. [05]
(b) Find trend by 5 yearly Moving Average Method also find STF. [05]

Year	1985	86	87	88	89	90	91	92	93	94	95
Sale	19.0	20.6	20.1	20.7	21.5	23.4	24.7	23.8	24.5	23.3	21.6

(c) Find Seasonal Indices by Simple Average Method. [05]

	Time period			
Year	**Jan-Mar**	**Apr-June**	**July-Sept**	**Oct-Dec**
1996	2050	2462	2127	1938
1997	2365	2754	2265	1860
1998	2560	2963	2150	2055
1999	2780	3355	2560	2365

[OR]

Q.4

(a) With which component of time series would you mainly associate each of the following? Why? [05]

(i) Strike in a factory delaying production for 10 days.
(ii) Diwali sales in a Department Store.
(iii) Fall in death rate due to advances in science.
(iv) An era of prosperity.
(v) Price of agricultural commodities.

(b) Find trend by 4 yearly Moving Average Method. [05]

Year	1978	79	80	81	82	83	84	85	86	87	88
Demand	614	615	652	678	681	655	717	719	708	779	757

(c) Find Seasonal Indices by Simple Average Method. [05]

Day	**Week**			
	I	**II**	**III**	**V**
Mon	360	350	380	390
Tue	400	430	440	450
Wed	480	490	490	500
Thu	600	580	590	600
Fri	660	680	690	690

****