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39
A-50
A-51

No. of printed pages: 02

SARDAR PATEL UNIVERSITY
FY BBA (II SEM.) (IB) (CBCS) EXAMINATION
Saturday, 2nd April 2016
02:30 pm to 04:30 pm
UM02CBBB06: Business Statistics

Total Marks: 60

Note: Graph papers should be provided on request.

Q1 A Distinguish between primary and secondary data. [4]

B The mean marks in statistics of 100 students in a class were 72. The mean of marks of boys was 75, while their number was 70.Find the mean marks of girls in the class. [5]

C From the following information find missing frequencies if given that the mean is 1.46. [6]

x	0	1	2	3	4	5	Total
f	46	?	?	25	10	5	200

OR

Q1 A Define Statistics and write its scopes. [4]

B From the prices of shares of X and Y given below, state which share is more stable in value. [5]

Share A	55	54	52	53	56	58	52	50	51	49
Share B	108	107	105	105	106	107	104	103	104	101

C From the following information : [6]

Factory	average wages(weekly)	SD	no. of wage earners
A	34.5	5.0	476
B	28.5	4.5	524

Determine
(1) Which factory A or B pays out larger amount as weekly wages?
(2) What is the average wages of all workers in both factories together?
(3) Find the coefficient of variation for both the factories & interpret it?

Q2 A What do you mean by LPP? Write its limitations. [4]

B Two products A and B are to be manufactured by a firm. Each of these products required processing on two machines M1 & M2. Product A required 5 hrs on machine M1 & 6 hrs on machine M2. Product B required 7 hrs on machine M1 & 2 hrs on machine M2. The available capacity per month is 120 hrs & 100 hrs for machine M1 & M2 respectively. The Profits per unit is Rs.10 & Rs.5 on product A & B respectively. Formulate the problem as a lpp. [5]

C Solve the following lpp by graphical method [6]
Max $Z = 70x + 100y$
Subject to $3x + 4y \leq 2100$; $4x + 3y \leq 2100$; $x \leq 450$; $y \leq 450$
$x, y \geq 0$

OR

Q2 A Define Operation research. State its characteristics. [4]

B Two products P1 & P2 are to be manufactured by a firm. Profits on p1 & p2 are Rs.30 & Rs.20 respectively. The products are to be processed on [5]

two machines first on milling machine & other on surface grinder. The capacities & the time required to produce a unit are as follow:

	P1	P2	Capacity
Milling machine	3 hours	1 hour	1500 man hrs/month
Surface grinder	1 hour	1 hour	1000 man hrs/month

Formulate the problem as a lpp.

C Solve the following lpp by graphical method [6]
Min $Z = 5000x + 7000y$
Subject to $10x + 12y \geq 500$; $20x + 12y \geq 600$; $20x + 40y \geq 1400$
$x, y \geq 0$

Q3 A Describe the transportation problem with its general form. [6]
B Solve the TP by (1)North-West Corner and [9]
(2) Vogel's Approximation Method.

	D	E	F	G	supply
A	19	30	50	10	50
B	70	30	40	60	90
C	40	8	70	20	60
demand	50	60	50	40	200

OR

Q3 A Discuss the assignment problem with its general form. [6]
B Solve the following assignment problem. [9]

Jobs → / workers ↓	I	II	III	IV
A	0	7	14	21
B	12	17	22	27
C	12	17	22	27
D	18	22	26	30

Q4 A Define time series. Write it's propose of analysis. [6]
B Determine trend for the following by 3 year moving average method. [9]

Years:	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Prices:	120	122	124	126	225	224	334	444	333	111	222

OR

Q4 A Discuss any one component of time series in brief. [6]
B Find the seasonal variations by simple average method for the following : [9]

years	Q1	Q2	Q3	Q4
1992	29	23	34	44
1993	23	33	45	35
1994	34	43	21	23
1995	12	13	11	24

X=X=X