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B.B.A.(Part-II) (Semester-IV) Examination, 2013
STATISTICAL TECHNIQUES FOR BUSINESS (Paper-II)
Sub. Code : 43947

Day and Date : Thursday 25-04-2013**Total Marks :40****Time : 3.00 p.m. to 5.00 p.m.**

- Instructions :**
- 1) All questions are compulsory.
 - 2) Figures to the right indicate full marks.
 - 3) Graph paper will be supplied on request.
 - 4) Use of non programmable calculator is allowed.

Q1) Attempt any Two:**[14]**

- a) Explain the method of Moving Averages. Find the progressive averages from the following:

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011
Profit	213	227	212	250	270	230	175	190	200

- b) Explain the terms (i) product control (ii) process control, in S.Q.C.

Find the control limits for np - chart from the following data.

Sample No. (each of 100 items)	1	2	3	4	5	6	7	8	9	10
No. of defectives	10	14	7	7	9	10	8	18	9	14

- c) Define Index Number. What are uses of index number? State the problems involved in the construction of index numbers.

Q2) Attempt any Two:**[16]**

- a) Define Time series and state its components.

Calculate 3 yearly moving averages from the following data.

Year	1	2	3	4	5	6	7	8	9	10
Sales in lakhs	4	7	10	12	10	15	20	22	23	22

b) Explain how to construct a control chart for variables.

The ranges of 10 samples of size 5 are given below. Draw a range chart and comment.

Sample No.	1	2	3	4	5	6	7	8	9	10
Sample range	0.1	0.4	0.9	0.7	0.6	0.5	0.2	0.3	0.2	0.6

For $n = 5, D_3 = 0, D_4 = 2.11$.

c) State Multiplication law of probability for any two events. A problem is given to two students A and B. Probability that A solves it is $\frac{2}{3}$ and B solves it is $\frac{3}{4}$. Find the probability that the problem will be solved.

d) Define Laspeyre's and Paasche's price indices. Find Laspeyre's and Paasche's price indices and hence find Fisher's price index number from the following data.

Article	Base Year		Current Year	
	Price in Rs.	Total Value in Rs.	Price in Rs.	Total value in Rs.
A	5	50	4	48
B	8	48	7	49
C	6	18	5	20

Q3) Attempt any Two:

[10]

a) Define mutually exclusive events.

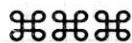
A box contains 20 tickets marked with 1 to 20. One ticket is drawn at random. Find the probability that the number on ticket drawn is (i) multiple of 5 (ii) perfect square.

b) What is S.Q.C.? Distinguish between defects and defectives.

c) Define value index number.

Find the value index number for the following data.

Commodity	2006		2010	
	Price	Quantity	Price	Quantity
A	2	5	3	4
B	1	2	2	3
C	4	1	4	1



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B.B.A. (Part - II) (Semester - IV) Examination, Dec. - 2013
STATISTICAL TECHNIQUES FOR BUSINESS (Paper - II)
Sub. Code : 43947

Day and Date : Saturday, 07 - 12 - 2013

Total Marks : 40

Time : 3.00 p.m. to 5.00 p.m.

- Instructions :**
- 1) All questions are compulsory.
 - 2) Figures to the right indicate full marks.
 - 3) Graph paper will be supplied on request.
 - 4) Use of calculator is allowed.

Q1) Attempt any two :**[14]**

- a) Explain Price Index Number by average of relative method. Find price Index Number by simple aggregate method.

Commodity	A	B	C	D
Price in 2009 (in Rs.)	162	256	257	132
Price in 2011 (in Rs.)	171	164	189	145

- b) Explain the construction of mean chart.
c) Define : Event and probability of an event.

If $P(A) = 0.3$, $P(B) = 0.6$ and A, B are independent events, find the probability that atleast one of them will happen.

Q2) Attempt any two :**[16]**

- a) State the formula for Fisher's quantity index number. Calculate Fisher's price index number from the following data.

Commodity	Base Year		Current Year	
	Price in Rs.	Value in Rs.	Price in Rs.	Value in Rs.
A	5	50	4	48
B	8	48	7	49
C	6	18	5	20

Comment on your result.

P.T.O.

- b) Define Time Series and state its components.
Determine the trend values by 5 yearly moving averages from the following data.

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Value	100	105	115	95	90	97	80	65	75	70

- c) Define S.Q.C and state its advantages.

From the following data construct \bar{X} - chart and give conclusion.

Sample No.	1	2	3	4	5	6	7	8	9	10
Mean	11.2	11.8	10.8	11.6	11.0	9.6	10.4	9.6	10.6	10.0
Range	7	4	8	5	7	4	8	4	7	9

For $n = 5$, $\Lambda_2 = 0.58$.

- d) State the addition law of probability for any two events. A card is drawn from pack of 52 cards. Find the probability of getting either spade card or an ace card.

Q3) Attempt any two :

[10]

- a) Explain the determination of trend values by moving Average Method.
b) Define value based index number and find same from the following data.

Commodity	A	B	C	D
Base year value	80	75	60	50
Current year value	120	72	60	80

- c) What is the chance that a leap year selected at random will contain 53 sundays?



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B. B. A. (Part - II) (Semester - IV) Examination, April - 2014
STATISTICAL TECHNIQUES FOR BUSINESS (Paper - II)
Sub. Code : 43947

Day and Date : Thursday, 10-04-2014
Time : 12.00 noon to 2.00 p.m.

Total Marks : 40

- Instructions :
- 1) All questions are compulsory.
 - 2) Figures to the right indicate full marks.
 - 3) Graph paper will be supplied on request.
 - 4) Use of calculator is allowed.

Q1) Attempt any Two: [14]

- a) What is S.Q.C.? Explain construction of Range chart.
- b) Define the terms: Event and probability of an event.

If $P(A) = 0.2$, $P(B) = 0.6$, find $P(A \cup B)$, when (i) A and B are independent
(ii) A and B are exclusive.

- c) Define Index number. State the problems involved in the construction of index numbers.

Q2) Attempt any Two: [16]

- a) Define Time series. State the components of time series. Calculate 4- yearly centered moving averages from the following data.

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Production	82	73	75	74	73	72	76	76	80	75

- b) Define Fisher's quantity index number. Find Fisher's price index number from the following data and comment.

Commodities	Price		Quantity	
	Base year	Current year	Base year	Current year
A	2	10	4	5
B	4	20	10	12
C	10	25	12	15

P.T.O.

- c) Explain the construction of control chart for number of defectives. In a certain sampling inspection, the number of defectives found in 10 samples of 100 units each are given below.
 16, 18, 11, 18, 21, 10, 0, 18, 17, 21
 Construct a np-chart and comment.
- d) Define sample space. State multiplication law of probability for two events. If a coin and a die are tossed together then write sample space and find the probability of appearing head on coin and even number on die.

Q3) Attempt any Two:

[10]

- a) Explain the method of moving averages related to time series.
- b) Define unweighted price index number by simple aggregate method. If Laspeyre's and Fisher's price indices respectively are 125 and 125.6, then find Paasche's price index number.
- c) What is the probability of getting exactly 53 sundays in a leap year?



Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Production	82	73	75	74	73	72	76	76	80	75

Commodities	Price		Quantity	
	Base year	Current year	Base year	Current year
A	2	10	4	2
B	4	20	10	12
C	10	25	12	15