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SB-0433

Second Year B. Com. (Honours) Examination

March / April – 2011

Business Statistics

Time : **3** Hours] [Total Marks : **70**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **S. Y. B. Com. (Honours)**

Name of the Subject :

☛ **Business Statistics**

☛ Subject Code No. : **0 4 3 3** ☛ Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(2) Attend every question.

(3) The figures to the right indicate full marks of the question.

(4) Statistical tables and graph papers would be supplied on request.

1 (a) Explain the types of data. What are the measures of central tendency ? Which is the best measure of dispersion ? Why ? **5**

(b) For a distribution if mean = 20, Variance =25, $\gamma_1 = 4$, $\beta_2 = 9$, then obtain first four moments about origin. **5**

2 (a) What is time series ? What are the methods to find the Trend values ? State the merits and demerits of the method of moving average to find the trend values. **4**

(b) Obtain second degree parabolic equation for the following data : **6**

Year	2001	2002	2003	2004	2005	2006	2007
Production (in '000 tonnes)	12	14	12	26	42	40	50

3 (a) Explain the following terms : 2
Sample space, Mathematical definition of probability.

(b) The independent probability of committing a computer mistake in a costing department per week in two sections are respectively 0.2 and 0.1. Then find the probability that at every week, there may be 4
(i) At least one computer mistake
(ii) One and only one computer mistake

(c) In a factory there are three machines and they produce daily respectively 200, 300 and 500 units of an item. The proportions defectives of these machines are 2%, 4% and 3% respectively. An item is taken at random from the day's production and it is found to be defective. Obtain the probability that the item is produced by second machine. 4

4 (a) An unbiased coin is tossed 1600 times then obtain the probability of getting head between 820 and 840. 5

(b) Obtain the expected frequencies by using poisson distribution for the following data : 5

No. of accident :	0	1	2	3	4
Days :	123	59	14	3	1

$e^{-5} = 0.6065$

5 (a) Explain scatter diagram method to study correlation. 3

(b) Two regression equations are $2x-3y+4=0$ and $4y-5x=8$. Obtain two regression coefficients and coefficient of correlation. If S.D. of π is 3, then find the value of S.D. of y. 4

(c) Calculate Rank coefficient of correlation for the following information : 3

Rank of workers according to salary :	5	6	4	2	1	3
Labour hours :	5	5	5	2	1	2.5

6 (a) What is base shifting ? What do you understand by deflating of Index numbers ? 4

(b) Calculate the cost of living Index Number by Aggregate expenditure method and by Family Budget Method : 6

Commodity	A	B	C	D	E	F	G	H
Unit Consumption in base year	200	50	50	20	40	50	60	40
Price in base year (Rs.)	10	30	40	200	25	100	20	150
Price in current year (Rs.)	12	35	50	300	50	150	25	180

7 (a) What are the methods of forecasting ? Explain exponential smoothing method. **3**

(b) Obtain the seasonal variations by the method of moving average for the following prices of a commodity : **7**

Year	*Season*			
	Q_1	Q_2	Q_3	Q_4
2007	68	62	61	63
2008	65	58	66	61
2009	68	63	63	67