



**A-2690**  
**Second Year B. Com. (Honours) (Sem. III)**  
**Examination**  
**March/April – 2015**  
**Business Statistics : Paper - III**

Time : Hours]

[Total Marks : 50

**Instructions :**

(1)

<p>नीचे दर्शायेव निशानीवाणी विगतो उत्तरवही पर अवश्य कपवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : SECOND YEAR B. COM. (HONOURS) (SEM. III)</p> <p>Name of the Subject : BUSINESS STATISTICS : PAPER - III</p> <p>Subject Code No. : 2 6 9 0 Section No. (1, 2,.....): Nil</p>	<p>Seat No. : [ ][ ][ ][ ][ ][ ][ ]</p> <p style="text-align: center;">Student's Signature</p>
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(2) Answer all the questions.

(3) Figures to the right indicate full marks of the questions.

- 1 (a) State the limitations of statistics. State the sources of collecting primary data. Why the tabulation method is usually preferred to testual presentation ? 5
- (b) The first three moments of a distribution about the value 7, calculated from a set of a observations are 0.2, 9.4 and -41.0. Calculate the measure of central tendency and dispersion. Also obtain the third moment about origin. 4
- (c) If the mean of 5 observations is 4.4 and the  $S.D. = \sqrt{8.24}$ , and if three of the five observations are 1, 2 and 6, then obtain the remaining two observations. 3

- 2 (a) The following data is obtained about the quarterly sales (in lacs of Rs.) of a commodity during the year 2007-2012. 4

Trend equation  $y = 20 + 0.5x$ , The unit of the  $x$  is one quarter.

Origin : The first quarter of the year 2007.

Seasonal variations :

Quarter :	I	II	III	IV
Seasonal index :	80	90	120	110

then estimate the quarterly sales for the year 2008.

- (b) For a distribution, the mean is 10, S.D. = 4,  $\gamma_1 = 1$  4

and  $\beta_2 = 4$  then obtain first four moments about origin.

Also comment about the nature of the distribution.

- (c) (i) In a certain office a letter is typed by A in 2

4 minutes. The same letter is typed by B, C and D in 5, 6 and 10 minutes respectively. What is the average time taken in completing one letter ?

- (ii) A machine is assumed to depreciate at the rate 3

of 35.5% per year in value in the first year, at the rate of 22.5% per year in value in the second year, and at the rate of 9.5% per year in value in third year, each percentage being computed on the diminishing value. Calculate the average percentage depreciation for the three years.

- 3 (a) State the importance of Time series. 4  
 (b) Calculate seasonal indices by the method of ratio to trend for the following data. Use linear equation : 8

	Season			
	Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>3</sub>	Q <sub>4</sub>
2009	518	518	506	539
2010	536	525	510	481
2011	507	527	505	531
2012	547	528	521	503

- 4 (a) Explain Bayes' Theorem and state the limitations of Mathematical definition of probability. 4  
 (b) A person is known to speak truth 1 out of 5 times. He throws a die and reports that is a digit of 5. Find the probability that it is really a digit 5. 5  
 (c) Two cards are drawn at random and kept them out. Then one card is draw at random from the remaining cards. Then the calculate the probability that it is a card of an ace. 4

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