

Goa Vidyaprasarak Mandal's
GOPAL GOVIND POY RAITURCAR COLLEGE OF COMMERCE AND
ECONOMICS
FARMGUDI – PONDA

M. COM. (SEMESTER – I) Examination, November 2014
C0102 - BUSINESS STATISTICS

Duration: 2 hours

Total Marks: 50

- Instructions:** 1) Answer all questions.
2) Each question carries 10 marks.

- Q 1) Briefly answer the following: (5 x 2 = 10)
- Sources of primary data.
 - Regression analysis and Correlation analysis.
 - Components of Time series.
 - Type I error and Type II error.
 - Mathematical Expectation.

Q 2 X) A study of wheat prices at two cities yield the following data.

	City A	City B
Average Price	₹2.463	₹ 2.797
Standard Deviation	₹0.326	₹0.207

Coefficient of correlation r is 0.779. Estimate from the above data the most likely price of wheat

- at city A corresponding to the price of ₹2.334 at city B
- at city B corresponding to the price of ₹3.052 at city A.

OR

Y) Fit straight line trend to the following data giving crude oil production, hence estimate the production for the year 2008.

Year	:	2000	2001	2002	2003	2004	2005	2006
Production	:	10.5	16.5	21.1	26.0	29.0	30.2	30.5

(in million tons)

- Q3 X) a) Define i) Sample space ii) Probability of an event.

- b) The probability that a contractor will get a plumbing contract is $\frac{2}{3}$, that he will not get an electric contract is $\frac{5}{9}$. If the probability of getting at least one contract is $\frac{4}{5}$, what is the probability that he will get both the contracts?

OR

- Y) A committee of four has to be formed from among 3 economists, 4 engineers, 2 statisticians and 1 doctor.
- What is the probability that each of the four professions is represented on the committee?
 - What is the probability that the committee consists of the doctor and at least one economist?

- Q 4 X) Distinguish between census and sample methods. Compare their relative merits and demerits.

OR

- Y) A random sample of 100 items taken from a large batch of articles contains 5 defective items,
- Set up 99% confidence limits for the proportion of defective items in the batch,
 - If the batch contains 2696 items, set up 95% confidence interval for the proportion of defective items.

- Q 5 X) What is statistical quality control? Explain the uses of C- chart and P - chart.

OR

- Y) An inspection team has collected the following data during the quality exercise in a computer cabinet manufacturing unit.

Samples	Observed Dimensions (in cms)					
	1	2	3	4	5	6
1	3.56	3.49	3.48	3.51	3.50	3.53
2	3.50	3.50	3.52	3.53	3.49	3.47
3	3.49	3.54	3.55	3.54	3.49	3.48
4	3.55	3.52	3.52	3.50	3.51	3.52
5	3.49	3.48	3.49	3.49	3.53	3.54
6	3.48	3.47	3.53	3.54	3.55	3.53

Work out the control chart for the observations so obtained.

Given that for $n = 6$, $d_1=2.53$, $d_2=0.848$, $D_3=0.066$, $D_4=2.004$