



GRETSA UNIVERSITY - THIKA

UNIVERSITY EXAMINATIONS JANUARY – APRIL 2017 SEMESTER

BACHELOR OF COMMERCE

COURSE CODE: BCBA 302

COURSE TITLE: MANAGERIAL STATISTICS

DATE: 4 APRIL 2017

TIME: 8.00 AM – 11.00 AM

INSTRUCTIONS TO CANDIDATES

1. SECTION A IS **COMPULSORY**.
2. SECTION B: ANSWER ANY OTHER **THREE** QUESTIONS.
3. **DO NOT** WRITE ANYTHING ON THIS QUESTION PAPER AS IT WILL BE AN EXAM IRREGULARITY.
4. ALL ROUGH WORK SHOULD BE AT THE BACK OF YOUR ANSWER BOOKLET AND CROSSED OUT.

CAUTION: All exam rooms are under CCTV surveillance during the examination period.

SECTION A:

QUESTION ONE:

- a) Explain the assumptions that Jacob Bernoulli developed in 1654-1705 for mathematical models (8 marks)
- b) Investors are said to be rational. Discuss the properties of normal distribution curves (14 marks)
- c) A tea company appoints 4 salesmen A,B,C,D and observes their sales in three seasons summer, winter and monsoon. The figures are in dollars

SEASONS	A	B	C	D	SEASON' S TOTAL
Summer	36	36	21	35	138
Winter	28	29	31	32	120
Monsoon	26	28	29	29	112
TOTALS	96	93	81	96	360

Required:

- a) Determine if the salesmen's significantly differ in performance (9 marks)
- b) Is there any significant difference between the seasons (9 marks)

SECTION B:

QUESTION TWO:

As a result of tests on 20,000 electric bulbs manufactured by a company . it was found that the life time of the bulb was normally distributed with an average life of 2040 hours and standard deviation of 60 hours . on the basis of the information, Estimate the number of bulbs expected to burn

- a) For more than 2150 hours (5 marks)
- b) Less than 1960 hours (5 marks)
- c) Explain 10 roles of the Poisson Distribution that is used to solve a variety of problems (10 marks)

QUESTION THREE:

- a) Describe the components of time series (12 marks)
- b) Discuss the importance of forecasting for managers (8 marks)

QUESTION FOUR:

- a) Describe the steps taken to calculating variance samples (10 Marks)
- b) The following table gives the number of days in a 50 days period during which automobile accidents occurred in a city. Fit Poisson distribution of the data:

No. of accidents	0	1	2	3	4
No.of days	21	18	7	3	1

(10 marks)

QUESTION FIVE:

- a) The quantity b in the regression equations is called the slope of coefficient. Discuss the properties of regression coefficients (12 marks)
- b) The following data relate to advertising expenditures in sh. Ten thousands and their corresponding sales (in sh .millions)

Advertising expenditure	10	12	15	23	20
Sales	14	17	23	52	21

Additional information:

- i) The sales corresponding to advertising expenditure of sh. 300000 (4 marks)
- ii) The advertising expenditure for a sales target of sh. 35 millions (5 marks)