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OFFICE OF THE DEPUTY PRINCIPAL

ACADEMICS, RESEARCH AND STUDENTS' AFFAIRS

UNIVERSITY EXAMINATIONS

2020/2021 ACADEMIC YEAR

...2.... SEM .....1... SEMESTER REGULAR EXAMINATION

FOR THE DEGREE OF BACHELOR OF BUSINESS MANAGEMENT

COURSE CODE: BBM 211

COURSE TITLE: BUSINESS STATISTICS

DATE: 16/03/21 **TIME: 9.00am-12.00pm**

INSTRUCTION TO CANDIDATES

- *Answer Question **ONE** and any other **TWO** questions*
- *Question ONE carries 30 marks*

QUESTION ONE

a) Distinguish between classification and tabulation (10 marks)
b) Discuss the uses of statistics to business organizations (5 marks)
c) Discuss the various probabilistic sampling methods (5 marks)
d) From the data below calculate the product moment coefficient of correlation stating the relationship portrayed (10 marks)

X	20	25	30	35	40
Y	50	55	60	65	70

QUESTION TWO

a) Discuss four roles of quantitative techniques in management. (10 marks)
b) Differentiate between Correlation and Regression analysis (5 marks)
c) Examine five major problems a modern manager would experience in using quantitative techniques in analyzing and solving business problems. (5 marks)

QUESTION THREE

The table below gives the prices of a set of products sold in a particular supermarket.

YEAR	2005		2010	
ITEMS	PRICE (Ksh.)	QUANTITY	PRICE (Ksh.)	QUANTITY
A	70	100	80	95
B	60	120	90	110
C	80	115	82	118
D	50	130	75	120

Using 2005 as the base year calculate;

a) Laspeyer's price index (4 Marks)
b) Paasche's price index (4 Marks)
c) Fisher's price index (4Marks)
d) Marshall-Edgeworth price index (4 Marks)
e) Discuss the various limitations of index numbers (4 Marks)

QUESTION FOUR

A company has a fleet of vehicles and is trying to predict the annual maintenance cost per vehicle. The following data have been supplied for a sample of vehicles:

Vehicle number	Age in years	Maintenance cost Per annum £ X 10
	(x)	(y)
1	3	60
2	8	132
3	5	100
4	8	120
5	10	150
6	4	84
7	4	90
8	2	68
9	6	104
10	9	140

Required:

a) Using the least squares technique calculate the values of a and b in the equation $y = a + bx$, to allow managers to predict the likely maintenance cost, knowing the age of the vehicle. (15 marks)

b) Estimate the maintenance costs of a 12-year-old vehicle and comment on the validity of making such an estimate. (5 marks)

QUESTION FIVE

A woven cloth is liable to contain faults and is subjected to an inspection procedure. Any fault has a probability of 0.7 that it will be detected by the procedure, independent of whether any other fault is detected or not.

Required:

a) If a piece of cloth contains three faults, A, B and C,

i) Calculate the probability that A and C are detected, but that B is undetected (5 marks)

ii) Calculate the probability that any two of A, B and C be detected, the other fault being undetected; (5 marks)

b) Explain the following terms as used in probability theory:

i) Events (2marks)
ii) Random experiment (2marks)
iii) Complementary events (2marks)
iv) Sample space (2marks)
v) Mutually exclusive events. (2marks)