



MACHAKOS UNIVERSITY

University Examinations 2022/2023

SCHOOL OF BUSINESS AND ECONOMICS
DEPARTMENT OF ECONOMICS
SECOND YEAR FIRST TERM EXAMINATION FOR
DIPLOMA IN BUSINESS MANAGEMENT

2906/204 –QUANTITATIVE TECHNIQUES

DATE: 27/3/2023

TIME: 8:30 – 11:30 PM

Instructions; the paper contains five questions answer all questions

QUESTION ONE

a) Explain the meaning of the following terms

- i. Dummy activity
- ii. Dangling activity
- iii. Loop
- iv. Slack
- v. event

(10 marks)

b) From the following data calculate index numbers for 2019 taking 2018 as the base and using the following formulae.

Laspyre's, Paasche's, Fishers ideal and Marshall edge worth method.

	2019		2018	
	Quantity	Price	Quantity	Price
Maize	65	20	135	30
Wheat	95	8	160	7
Beans.	150	5	320	8

(10 marks)

QUESTION TWO

- a) Explain five applications of quantitative technique in business decision making (10 marks)
- b) Discuss five uses of index number in decision making (10 marks)

QUESTION THREE

- a) Explain 3 advantages and 2 disadvantages of studying correlation in quantitative techniques k (10 marks)
- b) An examination of 8 applicants for a clerical post was taken by a firm. From the marks obtained by the applicants in the accountancy and statistics papers, compute the spearman's coefficient of correlation and comment on the relation.

Applicant	A	B	C	D	E	F	G	H
Marks in accountancy	15	20	28	12	40	60	20	80
Marks in statistics	40	30	50	30	20	10	30	60

(10 marks)

QUESTION FOUR

- a) The data below shows the demand for avocados in china for a period of 10 years.

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Production in tonnes	21	22	23	25	24	23	25	26	28	27

- i. Using product moment rule, find out the relationship between the year and levels of production
- ii. Estimate the levels of production for the year 2019 (10 marks)

- b) The information below shows the activities to be carried out during a satellite communication dish installation project.

	Activity	Preceding activity	Time in days	
	A	-	7	
	B	-	10	
	C	B	15	
	D	A	17	
	E	A	14	
	F	C,E	9	
Using the square;	G	B	15	method of least
	H	D	7	
	I	F,H,J	11	
	J	G	12	
	K	G	7	
	L	I,K	9	

- i. Draw a net work of the project
- ii. Determine the critical path of the project and project duration (10 marks)

QUESTION FIVE

- a) Explain five reasons for constructing index numbers (10 marks)
- b) Outline five limitations of quantitative technique in an organisation (10 marks)