



MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF ECONOMICS AND STATISTICS

BACHELOR OF ECONOMICS AND FINANCE

BACHELOR OF ECONOMICS

EES 201: STATISTICS FOR ECONOMICS I

DATE: 25/3/2021

TIME: 2.00-4.00 PM

INSTRUCTIONS:

Answer Question ONE and any other TWO questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Explain briefly different meaning of statistics. (4 marks)
- b) Explain clearly the functions of statistics. (5 marks)
- c) In class of 25 student of economics and statistics wrote a test and results of this test are summarized as follows:

| | | | | | | | |
|----|----|----|----|----|----|----|----|
| 12 | 12 | 10 | 11 | 9 | 13 | 12 | 15 |
| 11 | 13 | 7 | 12 | 11 | 9 | 10 | 16 |
| 13 | 17 | 6 | 10 | 15 | 5 | 6 | 8 |

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Calculate the following:

- i. Mean for this set of data. (3 marks)
- ii. Median for this set of data. (2 marks)
- iii. Mode values for this set of data. (2 marks)
- d) Given the table below, represent the information pie chart.(do not draw to scale)(4 marks)

| <u>Departments</u> | <u>Students</u> |
|--------------------|-----------------|
| Economic | 500 |
| Business | 1400 |
| Education | 1200 |

| | |
|--------------|-----|
| Engineering | 400 |
| Archetecture | 100 |

e) The table below gives the length of clothes from a tailor shop.

| Length (Cm) | Freq(f) | Midpoint (x) | $f x$ |
|-------------|-------------|------------------|-------|
| 10 – 20 | 3 | 15 | 45 |
| 20 – 30 | 7 | 25 | 175 |
| 30 – 40 | 10 | 35 | 350 |
| 40 – 50 | 16 | 45 | 720 |
| 50 – 60 | 34 | 55 | 1870 |
| 60 – 70 | 13 | 65 | 845 |
| 70 – 80 | 7 | 75 | 525 |
| 80 – 90 | 6 | 85 | 510 |
| 90 – 100 | 4 | 95 | 350 |

Calculate

- i. Arithnetric and Geometric Mean (5 marks)
- ii. Mode (3 marks)
- iii. Median (2 marks)

QUESTION TWO (20 MARKS)

a) The table below represents an extract of raw data of Statistics for Economics exam results in Machakos university in 2018.

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 49 | 41 | 45 | 53 | 47 | 46 | 48 | 42 | 43 | 46 |
| 45 | 36 | 56 | 44 | 61 | 68 | 54 | 58 | 51 | 47 |
| 47 | 49 | 42 | 48 | 53 | 48 | 41 | 65 | 45 | 52 |
| 58 | 50 | 55 | 45 | 43 | 72 | 63 | 45 | 38 | 43 |
| 42 | 47 | 43 | 49 | 46 | 57 | 49 | 44 | 47 | 48 |

- i. Using the marks data in the table, construct Frequency Table. (8 marks)
 - ii. Calculate the median mark in this examination (6 marks)
- b) Define the following terms:- (6 marks)
- i. Lorenz curve
 - ii. The Z chart
 - iii. Primary data

QUESTION THREE (20 MARKS)

a) Assume you are the officer in-charge of sickness and absence records, and that you kept records on 30 officers in your company over a 91-day period. The data for your records are tabulated below:

| | | | | | | |
|---------------------------|----|----|----|---|---|---|
| Number of officers absent | 0 | 1 | 2 | 3 | 4 | 5 |
| Number of days | 44 | 19 | 10 | 8 | 7 | 3 |

- i. Calculate the sample mean of the number of officers absent. (4 marks)
 - ii. Calculate the standard deviation of the number of officers absent per day. (5 marks)
- b) Discuss the steps in statistical enquiry. (5 marks)
- c) Using at least THREE real world examples, describe clearly how the economist can use statistics to solve world economic problems. (6 marks)

QUESTION FOUR (20 MARKS)

- a) Explain six characteristics of a Normal Distribution. (6 marks)
- b) The estimates of individuals involved in destruction of private property in the aftermath of political chaos 2017 in 7 different towns are tabulated in the table below.

| Town | Number of individuals involved |
|-------------|---------------------------------------|
| Thika | 60 |
| Nyeri | 40 |
| Kakamega | 61 |
| Kisumu | 58 |
| Mombasa | 14 |
| Nairobi | 14 |
| Nakuru | 16 |

- Use the information to construct histogram graph. {No need to use a graph paper}(6 marks)
- c) Define the following terms (8 marks)
- i. Population
 - ii. Census
 - iii. Sample
 - iv. Sampling frame

QUESTION FIVE (20 MARKS)

a) Using table below:

| Class | Σf | cf |
|-------------|------------|------|
| 5.5 – 9.5 | 5 | 5 |
| 10.5 – 14.5 | 6 | 11 |
| 15.5 – 19.5 | 15 | 26 |
| 20.5 – 24.5 | 10 | 36 |
| 25.5 – 29.5 | 5 | 41 |
| 30.5 – 39.5 | 4 | 45 |
| 35.5 – 39.5 | 2 | 47 |
| 40.5 – 44.5 | 2 | 49 |

Calculate

i. First and fourth quartile (6 marks)

ii. Deciles and percentile (6 marks)

b) The Statistics for Economics CAT results are tabulated below. (8 marks)

CAT:20,16,14,10,12,13,17,21,12,25,23,24,11,12,10,14,9,8,7

Calculate:

i. Mean deviation

ii. Variance

iii. Standard deviation

iv. Coefficient of variation (CV)