



**MACHAKOS UNIVERSITY**  
**ISO 9001:2015 CERTIFIED**  
**SCHOOL OF EDUCATION**  
**DEPARTMENT OF COM.TECH/ ECE**  
**SECOND YEAR SECOND SEMESTER**



**SUPPLEMENTARY / SPECIAL EXAMINATION FOR BACHELOR OF EDUCATION 2020-2021**  
**ACADEMIC YEAR**

**UNIT CODE: ECE209: STATISTICS, TESTS & MEASUREMENT**

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**ANSWER QUESTION ONE AND ANY OTHER TWO BELOW**

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**QUESTION ONE**

**(a) Distinguish between the following terms:**

- (i) Test and Measurement. **(4 marks)**
- (ii) Assessment and Evaluation. **(4 marks)**
- (iii) Positive Skewed distribution and Negative Skewed distribution. **(2 marks)**
- (iv) A frequency table and a histogram. **(2 marks)**

**(b) Explain any three purposes of evaluation in Education. (6 marks)**

**(c) Explain and illustrate the circumstances under which each of the following methods of assessment are used for young children:**

- (i) Observation. **(3 marks).**
- (ii) Checklist. **(3 marks).**
- (iii) Oral Interview. **(3 marks).**
- (iv) Tasks for children to complete. **(3 marks).**

**QUESTION TWO: (20 marks)**

**Test scores have the following distributions:**

2, 2, 2, 5, 2, 6, 2, 7, 2, 8, 2, 1, 2, 5, 2, 8, 2, 3, 11, 13, 13, 15, 16, 18, 21, 24, 26, 29, 31, 35, 34, 36, 40, 44, 44, 55, 46, 47, 47, 49, 53, 56, 57, 60.

**(i) Complete the frequency table below: (8 marks)**

Class Interval	Midpoint	Tally	Frequency f	Deviation From Mean (D)	Square Deviation D <sup>2</sup>	Frequency Times Deviation (f X D <sup>2</sup> )
0-5	2.5					
5-10	7.5					
10-15	12.5					
15-20	17.5					
20-25	22.5					
25-30	27.5					
30-35	32.5					
35-40	37.5					
40-45	42.5					
45-50	47.5					
50-55	52.5					
55-60	57.5					

**(ii) Compute the following:**

- (a) The mean. **(2 marks)**
- (b) The median. **(2 marks)**
- (c) The Variance **(5 marks)**
- (d) Standard deviation **(3 marks)**

### **QUESTION THREE (20marks)**

- (a) Complete the table below. **(4 marks)**.

CLASS INTERVAL	MID-POINT X	FREQUENCY f	Frequency x mid- point f x X
0-10	5	8	
10-20	15	11	
20-30	25	15	
30-40	35	24	
40-50	45	16	
50-60	55	11	
60-70	65	5	
Totals		N= 90	

- (b) Calculate the mean for the data in the table above. **(3 marks)**.
- (c) Calculate the position of the Median. **(3 marks)**.
- (d) In which class interval does the median fall? **(1 mark)**.
- (e) Using a suitable scale, draw the graph of frequency versus class interval. **(3 marks)**.
- (f) On the same graph, draw the frequency polygon. **(3 marks)**.
- (g) Show on the above graph the position of the Median. **(3 marks)**.

#### **QUESTION FOUR (20 marks)**

- (a) Construct **two** multiple choice questions suitable for grade two level. **(4 marks)**.
- (b) Construct **a test** involving matching items and worth 3 marks. Provide a marking scheme. **(4 marks)**.
- (c) Explain **Six** aspects a teacher would consider when:
  - (i) Assessing Language Development. **(6 marks)**
  - (ii) Assessing Character Participation. **(6 marks)**

#### **QUESTION FIVE (20 marks)**

- (a) Calculate the mean for the data in the table below. **(5 marks)**.
- (b) Complete the table below. **(7 marks)**.

Class Interval	mid-point $x$	Frequency $f$	Deviation from the Mean ( $D$ )	square deviation $D^2$	Frequency x Square Deviation $f \times D^2$
0-10	5	3			
10-20	15	14			
20-30	25	12			
30-40	35	28			
40-50	45	15			
50-60	55	12			
60-70	65	9			
70-80	75	5			
Totals		$N = 98$			
TOTALS					

- (c) Find the variance. **(5 marks)**.
- (d) Find the Standard Deviation. **(3 marks)**.