TUTORIAL QUESTIONS FOR UNGROUPED DATA

1. Given below are examination scores of a random sample of 20 SDS 2414 students:

   76 48 24 72 82 8090 52 30 58

   56 74 20 62 46 82 78 38 28 40

Use the examination data to compute the following and give a brief interpretation of each:

(a) Mean (b) Median (c) Mode (d) Standard deviation

2. Given the data below, compute and interpret the following:

(a) Mean (b) Median (c) Mode (d) Standard deviation

64 47 74 5 29 15 8 47 71

3. Zambia prison authorities are concerned about the number of violent incidents in its prisons. After examining the 10 prisons in the country, a data analyst finds the following patterns of data for the number of violent incidents last month:

17	21	42	32	16
24	31	15	22	26

Calculate and interpret the following:

(a) Mean (b) Median (c) Mode (d) Standard deviation

QUESTIONS FOR GROUPED DATA

4. Given below are data on the performance of students in a contemporary social problem July, 2017 test. Use the data to do the following (and in each case, briefly, only sentence interpret the results):

Marks	Number of students
18 - 20	1
21 – 23	2
24 – 26	3
27 – 29	6
30 – 32	7
33 - 35	11
36 - 38	5
39 - 41	6
42 - 44	4
45 - 47	3
48 - 50	2

(a) Mean (b) Median (c) Mode (d) Standard deviation

5. Given below are data on the performance of students in a Social and Development Studies (SDS 2414) 2015 examination. Examination scores for a class of 30 students are as follows: 75, 52, 73, 84, 61, 97, 98, 63, 83, 78, 76, 53, 65, 85, 71, 74, 72, 55, 71, 82, 70, 75, 94, 83, 60, 81, 65, 53, 73, 80

Test Scores	Frequency
51 - 60	
61 - 70	
71 - 80	
81 - 90	
91 - 100	

a) Copy and complete the table shown on the left

b) Find the modal class.

c) Find the class that contains the median.

d) Calculate the mean

e) Calculate the standard deviation

6. The data provided below show monthly wages obtained from a study on a sample of employees working for a Chinese Firm engaged in the construction of roads in Zambia.

Wages ($)	Frequency (f)
141 - 150	5
151 – 160	8
161 - 170	15
171 - 180	10
181 – 190	2

Based on this data, do the following:

(i) Calculate the sample size that was used in this study

(ii) Calculate the midpoints of all the class intervals in the table

(iii) Calculate the cumulative and relative frequency of the grouped data

(iv) Calculate the mean of the employees' wages

(v) Calculate the median wage in the sample

(vi) Calculate the mode of the employees' wages

(vii) Calculate the standard deviation

7. The data below shows the number of 50 kg bags of maize harvested by 1, 000 small scale farmers which are grouped in intervals of 5.

Class-interval	Frequency
10 – 14	8
15 – 19	30
20 – 24	40
25 – 29	94
30 – 34	126
35 – 39	156
40 – 44	176
45 – 49	138
50 – 54	118
55 – 59	70
60 – 64	20
65 – 69	16
70 – 74	8

(i) Calculate the mean and interpret the answer

(ii) Calculate the median and interpret the answer

(iii) Calculate the mode and interpret the answer

(iv) Calculate the standard deviation and interpret the answer

8. A survey was conducted by a group of students as a part of their environment awareness programme, in which they collected the following data regarding the number of plants in 20 houses in a locality.

Percentage of female	frequency
15 - 25	6
25 - 35	11
35 - 45	7
45 - 55	4
55 - 65	4
65 - 75	2
75 – 85	1

(i) Calculate the mean number of plants per house and interpret the answer

(ii) Calculate the median and interpret the answer

(iii) Calculate the mode and interpret the answer

(iv) Calculate the standard deviation and interpret the answer

9. Thirty women were examined in a hospital by a doctor and the number of heart beats per minute were recorded and summarised as follows.

Number of heart beats per minute	Number of women frequency
65 - 68	2
68 - 71	4
71 - 74	3
74 - 77	8
77 - 80	7
80 - 83	4
83 – 86	2

(i) Calculate the mean heart beats per minute for these womenand interpret the answer

(ii) Calculate the median and interpret the answer

(iii) Calculate the mode and interpret the answer

(iv) Calculate the standard deviation and interpret the answer

10. Given the data below on the length of service of a random sample of KCM employees; answer the questions that immediately follow:

Year of service	Number of employees
1-2	21
3-4	45
5-6	50
7-8	66
9-10	55
11-12	24
13-14	39

a) Find the mean of years served by the workers and in a sentence or two, explain what this means.

b) Find the median year of service and in a sentence or two, explain what this means.

c) Find the modal year of service and very briefly explain what this means.

d) Find standard deviation of the distribution and very briefly explain what this suggests.

11. Using the data of the test results of SDS 2414 students in the previous academic year, answer the questions that follow:

32 ; 56 ; 45 ; 78 ; 77 ; 59 ; 65 ; 54 ;
54 ; 39 ; 45 ; 44 ; 52 ; 47 ; 50 ; 52 ;
51 ; 40 ; 69 ; 72 ; 36 ; 57 ; 55 ; 47 ;
33 ; 39 ; 66 ; 61 ; 48 ; 45 ; 53 ; 57 ;
56 ; 55 ; 71 ; 63 ; 62 ; 65 ; 58 ; 55 ;

(i) Copy and complete the frequency table below;

Marks	Frequency
30 – 39	
40 – 49	
50 – 59	
60 – 69	
70 – 79	

(ii) Calculateand interpret the following;

(a) The sample size that was used in this study

(b) The midpoints of all the class intervals in the table

(c) The cumulative frequency of the grouped data

(d) The Mean, Median, Mode, and Standard deviation