



Course Code: ECO 407
Course Title: Advanced Applied Statistics
Instructions: Answer any THREE questions
Time Allowed: 2 hours

Credit Units: 2

Date:

Question One

1a). Based on the grouped data below, find the mode

5 marks

Marks	frequency
51-60	1
61-70	2
71-80	6
81-90	1

1b). List the steps involved in testing the statistical hypothesis for population parameters

9 marks

1c). A store manager believes that the average amount spent per week on margarine is ₦150. A random sample of 80 shoppers was selected from a normal population with standard deviation ₦15 and asked about the amount spent per week on this commodity. Results from the survey show that the average amount spent on margarine per week is ₦140

5 marks

Does this lend support to the store manager's opinion at 5% significance level given the critical value to be -1.96?

Question Two

2a). A hospital management in Mother's and Child in Ondo claims that the mean weight of babies delivered in their hospital is 3.5 kg. A researcher taken a sample of ten babies and obtained the following weights: 3.9, 4.0, 3.5, 3.2, 2.5, 2.8, 2.7, 4.5, 3.6, and 3.7

Test the hospital's management claim at 5% significant level

15 marks

2b). The following is the data of marks obtained by 20 students in Mathematics examinations:
Calculate Quarter 1, Quarter 2, and Quarter 3 **5 marks**

52	71	82	40	36	20	81	65	59	27
65	54	90	70	28	55	33	32	29	60

Question Three

3a). Find the value of the correlation coefficient from the table below: **15 marks**

Age (X)	Sugar level (Y)
43	99
20	66
59	81
57	87
25	79

3b). State the importance of Chi-Square test in applied statistics? **3 marks**

3c). Differentiate between Type I and Type II errors in research hypothesis **2 marks**

Question Four

4a). From the table below, last session, five random selected students took introductory to statistics continuous assessment test, and this semester, the applied statistics instructor is interested in these three questions:

Student	x	y
1	85	75
2	60	65
3	65	65
4	50	55
5	55	50