



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS
2024 1 EXAMINATION

COURSE TITLE: APPLIED STATISTICS

COURSE CODE: ECO 726

CREDIT UNITS: 2 UNITS

TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER THREE QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS

QUESTION 1

- a) Enumerate some of the well-known sampling distribution. **8 marks**
b) The table below contains sales information of xyz business outlet.

Week	Sales
1	15
2	25
3	38
4	32
5	40
6	37
7	50

Estimate the regression line and forecast the sales of the 10th and 12th weeks.

15.3 marks

QUESTION 2

- a) Specify the formular for computing paired sample t-test and explain its components. **6.3 marks**
b) Specify the formula for computing one-way ANOVA f-test statistics. **5 marks**
c) Suppose the random sample of $n_1 = 100$ waiting times observed under current system gives a sample mean $\bar{x}_1 = 8.97$ and $S_1^2 = 4.7098$. Further, suppose that the random sample of $n_2 = 100$ waiting times observed during the trial run of new system yield an $\bar{x}_2 = 5.14$ and an $S_2^2 = 1.9044$. Determine the mean at which the new system reduces the waiting time.

12 marks

- b.
- (i) Highlight four (4) stages of software development. *(4 marks)*
 - (ii) Mention four (4) tools used in Requirements Elicitation. *(4 marks)*

QUESTION THREE. (20 Marks)

- a. With the aid of a well-labelled diagram, draw the phases to be undertaken in the course of applying the **waterfall** or **linear-sequential** software life cycle model. *(10 marks)*
- b. Briefly explain the meaning of Physical Modularity in software development. *(6 marks)*
- c. Software crisis refers to some problems within the software development. State the components that was actually referred to in the crisis. *(4 marks)*

QUESTION FOUR. (20 Marks)

- a. Program testing and fault detection can be aided significantly by testing tools and debuggers. Discuss the various testing tools and debuggers. *(5 marks)*
- b. Give a concise explanation of the following testing components: *(10 Marks)*
- c. Outline any five (5) goals of Software Quality Assurance. *(5 marks)*

QUESTION FIVE. (20 Marks)

- a. Enumerate in details four (4) major Software Quality Assurance activities undertaken during the design phase. *(6 marks)*
- b. What is Compatibility Testing? Explain in details. *(14 Marks)*