



**FIRST YEAR EXAMINATION FOR THE AWARD OF THE DIPLOMA  
IN INFORMATION TECHNOLOGY  
FIRST SEMESTER, 2022/2023  
(SEPTEMBER-DECEMBER, 2022)**

**DIT 0208: QUANTITATIVE METHODS**

**STREAM: Y1 S1**

**TIME: 2 HOURS**

**DAY: TUESDAY, 12:00 – 2:00 P.M.**

**DATE: 06/12/2022**

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**INSTRUCTIONS**

- 1. Do not write anything on this question paper.***
- 2. Answer Question ONE [Compulsory] and any other THREE Questions.***

**QUESTION ONE**

- Define the following terms (6 marks)
  - Variance
  - Estimation
  - Simulation
- What is data presentation (2 marks)
- Differentiate between model verification and validation (4 marks)
- Discuss the different types of simulation. (8 marks)

**QUESTION TWO**

- What are the factors to consider when choosing the sampling design to use? Explain five. (10 marks)
- From long experience firestone tyres have a 0.8 probability that their xb.70 will last 40,000 miles before it becomes bald and adjustments made. If you purchase four xb.70. What's the probability that all tyres will last 40,000 miles? (5 marks)
- Assume that there are 10 rolls o
- f film in a box 3 of which are defective. Two rolls are to be selected one after another. What's the probability of selecting a defective roll followed by another defective roll? (5 marks)

### **QUESTION THREE**

- a) Explain 5 methods of data collection. (10 marks)
- b) Explain 5 ways of data presentation. (10 marks)

### **QUESTION FOUR**

- a) Explain six objectives of time analysis (12 marks)
- b) In details, discuss the process of model development. (10 marks)

### **QUESTION FIVE**

1,7,3,15,16,19,20,4,5,17,18,6,7,11,12,13,8,9,10,14.

- a) Using the data provided above, find:
  - i. Range (3 marks)
  - ii. Mode (3 marks)
  - iii. Interquartile range (4 marks)
- b) A teacher asked the students to complete 60 pages of a record note book. Eight students have completed only 32, 35, 37, 30, 33, 36, 35 and 37 pages. Find the standard deviation of the pages yet to be completed by them. (10 marks)