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**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2019/2020**

**THIRD YEAR FIRST SEMESTE EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATIONTECHNOLOGY**

**ICS 2307: SIMULATIONAND MODELLING**

**DATE: APRIL, 2020 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE: 30 MARKS**

a. Using relevant examples discuss the following simulation and modeling steps:-

i. System definition.

[2 marks]

ii. Model formulation.

[2 marks]

iii. Input data collection and analysis.

[2 marks]

iv. Model translation.

[2 marks]

v. Verification and validation.

[2 marks]

b. Explain any three statistical models that can be used in statistical influencing. [6 mark]

c. Outline the components and organization of a discrete event simulation (DES) [4 marks]

**QUESTION TWO: 20 MARKS**

Juma sells insurance on a part-time basis. His records on the number of policies sold per week over a 50 period are given below as :-

|  |  |
| --- | --- |
| No of policies sold per week | Frequency |
| 0  1  2  3  4  Total | 8  15  17  7  3  50 |