



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (TELECOMMUNICATION AND INFORMATION TECHNOLOGY)

SPH 316: INFORMATION TECHNOLOGY I

DATE: 14/12/2021

TIME: 11.00-1.00 PM

INSTRUCTIONS:

Instructions to candidates

This paper consists of **FIVE** (5) questions.

Answer **QUESTION ONE** (1) and any other **TWO(2)** questions.

Marks for each question are as indicated.

You should have the following for this examination:-

1. Answer booklet;
2. Non-programmable scientific calculator;
3. Writing instruments.

SECTION A (COMPULSORY): ANSWER ALL QUESTIONS

QUESTION ONE (30 MARKS)

- a) Demonstrate the importance of having a robust system in an institution (6 marks)
- b) Show the functions of data base program developer (4 marks)
- c) Define Entropy (4 marks)
- d) When do we say a systems is redundant and what is the significance of the same. (5 marks)
- e) Define S/N ratio, what's the significance of the ratio (4 marks)
- f) Explain SS / TDMA (4 marks)
- g) What are the effects of not properly sampling a given signal, Calculate the sampling rate of a voice a 4KHZ bandwidth (3 marks)

SECTION B: ANSWER ANY TWO (2) QUESTIONS

QUESTION TWO (20 MARKS)

- a) Classify the various mathematical model of an information management system. (12 marks)
- b) Give a Detailed explanation on the process in developing an information systems (8 marks)

QUESTION THREE (20 MARKS)

- a) Discuss the hierachiel data base model (10 marks)
- b) Give a detailed explanation of a management information systems (10 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss the various types of line coding (5 marks)
- b) Discus the various factors that are considered when creating an operation system (15 marks)

QUESTION FIVE (20 MARKS)

- a) Discuss Various Application of information system. (8 marks)
- b) Create a system that can be applicable for student management at machakos university. (12 marks)