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QUALIFICATION : **BACHELOR OF SCIENCE**	
QUALIFICATION CODE: **07BOSC**	LEVEL: **6**
COURSE: **ELECTRICAL CIRCUITS AND ELECTRONICS**	COURSE CODE: **ECE602S**
DATE: **JANUARY 2024**	SESSION: **1**
DURATION: **3 HOURS**	MARKS: **100**

SECOND OPPORTUNITY / SUPPLEMENTARY: EXAMINATION QUESTION PAPER

EXAMINER: **PROF MUNAWAR KARIM**

MODERATOR: **DR VAINO INDONGO**

INSTRUCTIONS

1. Answer all questions on the separate answer sheet.
2. Please write neatly and legibly.
3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.
4. No books, notes and other additional aids are allowed.
5. Mark all answers clearly with their respective question numbers.

PERMISSIBLE MATERIALS:

1. Non-Programmable Calculator

This paper consists of 2 pages including this front page

1) Describe an experiment to measure the open circuit voltage of a cell. Show the circuit components needed as well as meters required for the measurement. (40)

2) Draw a circuit diagram for an inverting amplifier with a gain of ten. Label all components. (20)

3) For a sinusoidal signal the current output of a circuit lags 90º behind the input. Identify the circuit component. Provide your reasoning. (20)

4) For a sinusoidal signal the voltage output of a circuit leads the input by 90º. Identify the circuit component. Provide your reasoning. (10)

5) A sinusoidal signal needs to be attenuated by a factor of 1000 at a frequency of 1000 Hz. Design a circuit that will meet the requirements. Calculate and identify the components. (10)

END OF QUESTION PAPER