THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND COMMUNICATIONS ENGINEERING

FIRST SEMESTER EXAMINATION (2021)

EE341 COMPUTER ARCHITECTURE
(BSAP/3)

TIME ALLOWED: 3 HOURS

INFORMATION FOR STUDENTS

1. You have **TEN (10) MINUTES** to read the paper.
    You must not begin writing during this time.

2. All answers must be written in the **ANSWER BOOK** supplied. **COMPLETE THE DETAILS REQUIRED ON THE FRONT COVER OF YOUR ANSWER BOOK - DO THIS NOW**.

3. Only drawing instruments and calculators are permitted on your desk.

4. Answer all questions.

5. Total available mark is 50.

6. If you are found cheating in the Examination, the penalties specified by the University shall apply.

7. **TURN OFF** all mobile phone and place them on the floor under your sit before the start of examination.

QUESTION ONE [5 + 5 = 10 MARKS]

a) Differentiate between RISC and CISC.

b) Represent A= B + C in all 3 architectures.

QUESTION TWO [5 + 5 = 10 MARKS]

a) Explain the Instruction Formats.

b) Differentiate between Harvard and Von Neumann architecture.

QUESTION THREE [2 + 2 + 2 + 2 + 2 = 10 MARKS]

Explain the following addressing mode with proper diagrammatic representation:

a) Direct Addressing
b) Register Addressing
c) Register indirect Addressing
d) Displacement Addressing
e) Indexed Addressing

QUESTION FOUR [5 + 5 = 10 MARKS]

a) Define what is Operating system and explain its user and system view?
b) Explain the cache operations?

QUESTION FIVE [5 + 5 = 10 MARKS]

a) Explain the concept of pipelining?
b) Explain the limitations of the pipelining?