

The Papua New Guinea University of Technology

DEPARTMENT OF MINING ENGINEERING

2021 FIRST SEMESTER EXAMINATION

Fourth Year Mineral Processing Engineering

**MP423 – SOLID/LIQUID SEPARATION & FINE PARTICLE PROCESSING**

DATE: FRIDAY, 18<sup>th</sup> JUNE 2021

TIME: 08:20 AM

TIME ALLOWED: 3 HOURS

**INFORMATION FOR CANDIDATES:**

1. You have ten minutes to read this question paper. You **SHOULD NOT** begin writing during this period.
2. There are **THREE** questions altogether. Answer all **THREE** questions.
3. **ALL** answers must be provided on the answer book provided. No other written material will be accepted.
4. Write your **NAME** and **NUMBER** clearly on the **ANSWER BOOK**. Do this **NOW**.

**Question one:**

- a) Briefly discuss the principals of Sedimentation Separators.
- b) In a conventional thickener particles may settle in four ways; briefly describe them.

**Question two.**

Discuss the three mechanisms of filtration and briefly describe the operating principles of the following filtration equipment and outline their advantages and disadvantages.

- a) Pressure filters
- b) Disc and Drum filters

**Question three.**

In thermal drying, certain factors affect the rate of evaporation; discuss those factors and describe the operating principles of a;

- a) Rotary dryer
- b) Fluid bed dryer