BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE EDUCATION

Bachelor of Science Honours Degree in Science Education (HBScEd MT) Part 1.1

MTE112: History and Philosophy of Mathematics Duration 3 hours

Semester Examinations

AUG 2023

INSTRUCTIONS

(i) Answer **Three** questions

(ii) Begin each question on a fresh page

(iii) Each question carries **100** marks

1. (a) Differentiate inductive from deductive mathematical productions illustrating with examples drawn from school mathematics.

   (b) Account for the dominance of inductive over deductive instruction in school mathematics.

2. Discuss **four** philosophies of mathematics showing their implications for classroom practice.
3. Examine events and activities that earned Gauss the title "Prince of mathematics."
4. Discuss the assertion that: "The history of mathematics lacking the guidance of philosophy is blind while the philosophy of mathematics turning its back on the most intriguing phenomena in the history of mathematics is empty" (Lakatos, 1970, p.135).

5. Discuss how **three** local affective factors are a critical consideration in learners' problem solving efforts.

END OF PAPER