

Paro College of Education
Royal University of Bhutan
Spring Semester Examination 2021

Module: MTA101 Mathematics in Lower Primary I

Programme: BEd (P)

Level: I

Writing Time: 2 hours

Full marks: 60

Instruction: There are *seven* questions in this exam paper. Answer any *five* questions. All questions carry equal marks. Intended marks for all the sub-questions are given in bracket alongside.

(5 × 12 = 60 marks)

Question 1

- a. What is meant by a 'process' as referred to the process standards of the NCTM's *Principles and Standards for School Mathematics*? [2]
- b. Give a brief description of each of the five process standards. [10]

Question 2

- a. Give a brief account of your views and analysis on the Bhutanese mathematics curriculum in relation to the NCTM's *Principles of School Mathematics*. [7]
- b. List five requirements of a teacher that are essential as a professional standards for teaching mathematics. [5]

Question 3

- a. What are the five content strands as defined by the NCTM's *Standards for School Mathematics*? [2.5]
- b. Explain how the above content strands are emphasized differently in different grade bands in the Bhutanese mathematics curriculum? [9.5]

Question 4

- a. What does it mean to say that understanding exists on a continuum from relational to instrumental? Illustrate with an example of an idea to explain how a student's understanding might fall on either end of the continuum. [6]
- b. Explain two ways that technological tools have affected the mathematics curriculum and how it is taught. Give examples to support your explanation. [6]

Question 5

Briefly explain each of the five strands of mathematically proficient people. Use an illustration to clarify the concepts. [12]

Question 6

- a. Explain the role that language plays in the teaching and learning of school mathematics particularly in the lower primary levels giving relevant examples of your own experiences. [6]
- b. What kind of information can you expect to find on the internet that would be useful in teaching mathematics? How can you evaluate the quality of that information? [6]

Question 7

- a. Name some of the emerging technologies in the educational arena? Describe how you can be ready for new technologies in the future to teach mathematics in the primary classes? [2 + 4]
- b. Briefly explain two good reasons with supportive examples as to why you would choose to teach mathematics relationally. [6]