

THE OPEN UNIVERSITY OF SRI LANKA  
M.A. IN TEACHER EDUCATION - PART II  
FINAL EXAMINATION 2008  
ESP 2266 – MATHEMATICS AT PRIMARY LEVEL



0011

DURATION: THREE (03) HOURS

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DATE: 30<sup>th</sup> May 2008

TIME: 9.30 a.m. – 12.30 p.m.

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Answer only three Questions. Each answer should be given in a Separate Book.

01. a) Discuss two surveys or research studies on primary mathematics, conducted in Sri Lanka.
- b) Explain why survey/research studies are essential for curriculum development and teacher training?
- c) Explain the applications of action research related to classroom teaching-learning process for a teacher educator.
02. a) Discuss the significance of the teaching units used for primary mathematics in the National Colleges of Education.
- b) How does the 'Teacher Education' curriculum help student teachers to acquire an awareness of the primary mathematics curriculum used in schools?
- c) Compare the teaching units used for Primary Mathematics in National Colleges of Education with those used in Teacher Colleges.
03. a) Using the method of 'Proof by contradiction', show that  $\sqrt{2}$  is an irrational number.
- b) Prove by reduction that  $1^3 + 2^3 + 3^3 + \dots + n^3 = \frac{1}{4} n^2 (n+1)^2$
- c) Find the sum of the series  $1^3 + 3^3 + 5^3 + \dots + (2n+1)^2$
- d) Calculate the sum of the series  $2 \times 3 + 3 \times 4 + 4 \times 5 + \dots$  up to  $n^{\text{th}}$  term.

04. i. There are 20 books on a shelf. Two of them are with red covers and they must not be put together. In how many ways can the books be arranged?
- ii. In how many ways can 8 people sit at a round table?
- iii. A mixed hockey team containing 5 men and 6 women is to be chosen from 7 men and 9 women. In how many ways can this be done?
05. i. What is 'mental mathematics'?
- ii. Explain using examples, the use of mental mathematics in teaching mathematics at primary grades.
- iii. What are the main points which need teacher's attention in using mental mathematics?
- iv. Describe how questioning could be used in directing students for mental mathematics.
06. Write short notes on any three (03) of the following.
- i. Objectives of teaching mathematics at primary level.
- ii. The importance for the mathematics teacher to study history of mathematics.
- iii. The teacher's role in evaluating the development of mathematics competence in primary school children.
- iv. Primary and secondary concepts in mathematics.

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