AUGUST 2023
EBS 322
METHODS OF TEACHING PRIMARY SCHOOL MATHEMATICS
2 HOURS

Candidate's Index Number
Signature:

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
SCHOOL OF EDUCATIONAL DEVELOPMENT AND OUTREACH
INSTITUTE OF EDUCATION

COLLEGES OF EDUCATION
FOUR-YEAR BACHELOR OF EDUCATION (B.ED)
THIRD YEAR, END-OF-FIRST SEMESTER EXAMINATION, AUGUST 2023

14TH AUGUST 2023 **METHODS OF TEACHING PRIMARY SCHOOL MATHEMATICS** **9:00 AM – 9:30 AM**

This paper consists of two sections, A and B. Answer ALL the questions in Section A and TWO questions from Section B. Section A will be collected after the first 30 minutes.

SECTION A
(20 MARKS)

Answer ALL questions in this Section.

Items 1 to 20 are stems followed by four options lettered A to D. Read each item carefully and circle the letter of the correct or best option.

1. Which of the following is/are examples of primary concepts in mathematics?
   I. Prism
   II. Angle
   III. Triangle
   A. I
   B. I and II
   C. II
   D. III

2. Teaching a mathematical primary concept requires the teacher .....
   A. defining the concept.
   B. getting the learners to find meaning of the concept.
   C. giving several examples and non-examples of the concept.
   D. writing the concept severally on the writing board.

3. Which of the following ways would a learner in primary school **not** employ in forming concepts?
   A. Abstraction
   B. Accommodation
   C. Modernisation
   D. Noise

4. The following are indicators of number sense, **except** ..... numbers.
   A. cardinal
   B. nominal
   C. ordinal
   D. real

5. Which of the following activities is **not** a pre-number work?
   A. Counting
   B. Matching
   C. Ordering
   D. Sorting

6. Identify the correct teaching order of the teaching number using the following activities to B1 learners.
   I. Identifying the numerals by their number names
   II. Writing of numerals
   III. Counting and identifying groups with their number names
   IV. Identifying the number names using flashcards
   A. I, III, II, and IV
   B. I, II, III, and IV
   C. IV, III, I, and II
   D. IV, II, I, and III

7. A B6 learner must model the numeral 4,351,000, using the unit of Dienes base ten materials for one thousand as follows: .....
   A. 4 blocks, 3 flats, 5 longs, and 1 unit
   B. 4 flats, 3 blocks, 5 longs, and 1 unit
   C. 4 longs, 2 blocks, 5 blocks, 5 longs, and 1 unit
   D. 4 longs, 3 flats, 5 blocks, and 1 unit

8. The numerals 20, 9, and 11 in the subtraction sentence $20 - 9 = 11$ are ..... respectively.
   A. difference, subtrahend, and minuend
   B. minuend, difference, and subtrahend
   C. minuend, subtrahend, and difference
   D. subtrahend, minuend, and difference

9. Which of these statement(s) about odd numbers should a B5 learner indicate as **true** about odd numbers?
   I. Odd numbers are numbers which are divisible by 2.
   II. The sum of consecutive odd numbers gives square numbers.
   III. Successive odd numbers have differences of 2.

   A. I and II only
   B. I and III only
   C. II and III only
   D. I, II, and III

10. Which of the following statement(s) should a B5 learner conclude as **not** true about even numbers?

I. Even numbers are natural numbers which has 2 as one of it factors.
II. The sum of consecutive even numbers is an even number.
III. Successive even numbers differ by 1.

A. I only
B. II only
C. III only
D. II and III only

11. The Sieve of Eratosthenes is a teaching activity a teacher teaching B6 learners can use to generate which of these numbers? ..... numbers.
A. Even
B. Figurative
C. Odd
D. Prime

12. Which of these statement(s) should a teacher assist a B5 student to discover as **false** statement(s) about prime numbers?

I. All prime numbers are odd numbers.
II. One (1) is the least prime number.
III. Prime numbers are natural numbers with one (1) and the number itself as the only factors.

A. I only
B. II only
C. III only
D. I, II and III

13. Which one of the following numbers would you assist a B6 learner to identify as **not** divisible by 3?
A. 111
B. 246
C. 462
D. 517

14. Which of the following list of numerals should a B5 learner generate as all the factors of 36?
A. 1, 2, 3, 4, 6, 9, 18, 36
B. 1, 2, 3, 4, 6, 9, 12, 18, 36
C. 2, 4, 9, 12, 18
D. 1, 3. 6, 9.

15. The operation multiplication can be taught as which of the following?
A. Mixing sets
B. Partitioning
C. Repeated division
D. Repeated subtraction

16. Which of the following approaches should a B6 learner employ to simplify a common fraction completely? The ..... of numerator and denominator.
A. factors
B. HCF
C. LCM
D. multiples

17. A learner in B6 must show the word problem: 'How many baby dresses all together could a dressmaker make from a 6-metre cloth if he makes a baby dress from a two-thirds metre cloth?'
    A. $6 \times \frac{2}{3}$
    B. $6 + \frac{2}{3}$
    C. $6 \div \frac{2}{3}$
    D. $6 - \frac{2}{3}$

18. Which of the following arithmetic sentences depicts the associative property?
    A. $2 + 8 = 8 + 2$,
    B. $2 + (8 + 6) = (2 + 8) + 6$,
    C. $2 \times (8 + 6) = (2 \times 8) + (2 \times 6)$
    A. $5 + 6 = 11$

19. The fathom, span, stride and pace are arbitrary units for the measurement of .....
    A. area.
    B. length.
    C. mass.
    D. time.

20. The standard unit a teacher must introduce to B3 learners for measurement of mass is .....
    A. centigramme.
    B. gramme.
    C. kilogramme.
    D. milligramme.

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SECTION B
[40 MARKS]

Answer any TWO questions in this Section.

1.

a. Describe how you would help B1 pupils to solve the problem $9 - 4$ using the following approaches:
   i. Take away **[3 marks]**
   ii. Comparison **[5 marks]**

b. How would you explain to a B2 pupil that in the numeral 39, the digit 3 is greater the digit 9, using concrete materials? **[12 marks]**

2.

a. With the help of concrete materials, describe how you would assist B4 learners to compare and tell which of the fractions: two-thirds and five-eighth is greater. **[8 marks]**

b. A B4 learner indicated that $\frac{1}{2} + \frac{1}{3} = \frac{2}{5}$.
   i. What did he/she do wrongly? **[3 marks]**
   ii. Describe how you would use pictorial representation to assist the learner to solve the problem. **[9 marks]**

3.

a. Describe how you would assist a B3 leaner to find the quotient of the division sentence $18 \div 3$ using the interpretation:

i. sharing **[4 marks]**

ii. grouping **[4 marks]**

b. How would you help B5 learners to list all the prime numerals from the natural numerals 1 to 50. **[12 marks]**

4.

a. Differentiate between the terms direct comparison and indirect comparison used in the measurement of length. **[8 marks]**

b. Outline the activities you will take a learner in B4 through for them to discover the metre as a standard unit for the measurement of lengths. **[12 marks]**