JULY 2023
EBS 356J
METHODS OF TEACHING MATHEMATICS
40 MINUTES

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, FIRST SEMESTER MID-SEMESTER QUIZ, JULY 2023

28TH JULY 2023 **METHODS OF TEACHING MATHEMATICS** **8:00 AM – 8:40 AM**

Answer ALL the questions.
(20 MARKS)

For items 1 to 10, each stem is followed by four options lettered A to D. Read each item carefully and circle the letter of the correct or best option.

1. A B7 learner identifies $P = \{Natural\ numbers\}$ as a ..... set.
   A. complement
   B. finite
   C. infinite
   D. null

2. A B7 learner identifies the set $Q = \{factors\ of\ 60\}$ as ..... set.
   A. Complement
   B. Finite
   C. Infinite
   D. Null

3. A B7 learner identifies a singleton as a set with ..... elements.
   A. 0
   B. 1
   C. 5
   D. 10

4. Which of these sets should a Junior High School Mathematics teacher help learners to identify as a universal set?
   A. {Early Childhood Education students in Bassaw College of Education}
   B. {Mathematics and ICT club students in Bassaw College of Education}
   C. {Primary Education students in Bassaw College of Education}
   D. {Students in Bassaw College of Education}

Use the set information to answer questions 5 to 7
The universal set $U = \{Natural\ numbers\ up\ to\ 10\}$, $A = \{factors\ of\ 18\}$, and $B = \{Prime\ numbers\}$ where A and B are subsets of U.

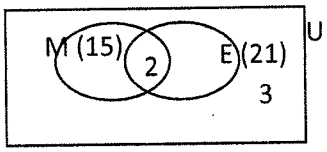
5. A B8 learner lists the complement of B as .....
   A. $\{1, 3, 6, 5, 7, 9\}$
   B. $\{1, 3, 5, 7, 9, 10\}$
   C. $\{2, 3, 5, 7, 9, 10\}$
   D. $\{1, 4, 6, 8, 9, 10\}$

6. A B8 learner lists the union of A or B, $(A \cup B)$ as .....
   A. $\{1, 2, 3, 5, 6, 7, 9\}$
   B. $\{1, 3, 5, 7, 9\}$
   C. $\{1, 2, 3, 5, 7, 9\}$
   D. $\{1, 3, 5, 7, 9, 11, 18\}$

7. Which of the following should a B8 learner lists as the intersection of A or B?
   A. $\{\ \}$
   B. $\{1, 3, 5, 7, 9\}$
   C. $\{2\}$
   D. $\{2, 3\}$

8. A B9 learner list the sub sets of $\{2, 3, 5\}$ as .....
   A. $\{\ \}, \{2\}, \{3\}, \{5\}\{2, 3\}, \{2, 5\}, \{3, 5\}\{2, 3, 5\}$
   B. $\{2\}, \{3\}, \{5\}\{2, 3\}, \{2, 5\}, \{3, 5\}\{2, 3, 5\}$
   C. $\{\ \}\{1\}, \{2\}, \{3\}, \{5\}\{2, 3\}, \{2, 5\}, \{3, 5\}\{2, 3, 5\}$
   D. $\{\ \}, \{2\}, \{3\}, \{5\}\{2, 3\}, \{2, 5\}, \{3, 5\}$

The Venn diagram below shows the number of B7 learners in Juabo JHS who likes Mathematics (M) or English (E) or both. Use the Venn diagram to answer questions 9 and 10.



9. How many B7 learners indicated they liked mathematics but not English?
   A. 13
   B. 16
   C. 19
   D. 21

10. All together, how many B7 learners are in the class?
    A. 25
    B. 34
    C. 37
    D. 39

For items 11 to 14, write the appropriate responses in the spaces provided.

11. Using a rectangular shaped drawing, show the fraction $1\frac{3}{5}$, pictorially. **2 marks**

12. Clearly outline how you would use equivalent fractions to assist B8 learners to evaluate $1\frac{1}{2}+\frac{1}{3}-\frac{1}{4}$. **3 marks**

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13. Describe how you would express 0.375 as a common faction. **2 marks**

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14. Briefly describe how you would assist a B8 learner to express the ratio, 4:5, as a percentage. **3 marks**

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