

FEBRUARY 2021
EBS 101
ELEMENTARY ALGEBRA
30 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)
FIRST YEAR, FIRST SEMESTER MID SEMESTER QUIZ, FEBRUARY 2021

FEBRUARY 16, 2021

ELEMENTARY ALGEBRA

3:00 PM – 3:30 PM

Answer ALL the questions.

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.

- Find the value of x for which $16_x + 32_x = 40_{ten}$
 - 2
 - 5
 - 6
 - 8
- Find the value of x such that $324_x = 89$.
 - 6
 - 5
 - 4
 - 3
- Find the value of the missing addend so that the following addition is true:
$$\begin{array}{r} 212_3 \\ + \underline{\quad\quad\quad}_3 \\ \hline 2102_3 \end{array}$$
 - 1102_3
 - 1010_3
 - 1211_3
 - 1221_3
- Given that the set $A = \{0, 1, 2, 3, 4, 5, 6\}$ represents the elements of a certain number base. Which of the following number bases can best describe the unknown base?
 - 5
 - 6
 - 7
 - 8

5. Find the missing number if the following addition sentence is in base six.

$$\begin{array}{r} 4 \ 5 \ 2 \\ + \ * \ * \ * \\ \hline 2 \ 5 \ 4 \end{array}$$

- A. 145
B. 154
C. 415
D. 514
6. The number 287 when converted to base 3 is
- A. 101122_{three}
B. 100122_{three}
C. 111122_{three}
D. 111112_{three}
7. Find the value of x such that $365_7 + 43_x = 217_{ten}$.
- A. 5
B. 6
C. 7
D. 8
8. Find the base, n , for which $102_n = 51_{ten}$.
- A. 7
B. 8
C. 13
D. 49
9. In a library, the ratio of number of story books to that of non-story books was 4:3 when the total number of story books was 1248. When some more story books were bought, the ratio became 5:3. How many new story books were bought?
- A. 312
B. 321
C. 936
D. 1560
10. Three numbers are in the ratio $1/2 : 2/3 : 3/4$. The difference between the greatest and the smallest numbers is 36. What are the three numbers?
- A. 60, 72, 96
B. 72, 84, 96
C. 72, 84, 108
D. 72, 96, 108

11. Convert 412 base five to a base ten numeral.
- 112
 - 107
 - 89
 - 81
12. A person types 360 words in 4 minutes. How much time does he take to type 900 words?
- 9
 - 10
 - 15
 - 90
13. What is the value of the digit "3", in base ten, in the number 4315_5 ?
- 5
 - 15
 - 57
 - 75
14. Express $5(5^2+2)$ as a number in base 5.
- 1020_5
 - 1200_5
 - 1002_5
 - 2010_5
15. There are "b" boys and "g" girls in a class. The ratio of the number of the boys to the total number of students in the class is given by:
- $\frac{g}{b+g}$
 - $\frac{b}{g}$
 - $\frac{b+g}{b}$
 - $\frac{b}{b+g}$
16. A salesperson at a provision store is paid GH¢80.00 per week in wages plus a 4% commission on all her sales. How much will that salesperson earn in a week in which she sold GH¢4032.00 worth of goods?
- GH¢241.28
 - GH¢201.42
 - GH¢192.64
 - GH¢192.25
17. If a car travels at an average speed of 70 kilometers per hour for 4 hours, what will be distance, in kilometers, covered at the end of the fourth hour of travel?
- 17.5 kilometers
 - 74 kilometers
 - 174 kilometers
 - 280 kilometers

18. What is the original price of an item if it costs GH¢12.60 following a 10% discount off the selling price?
- A. GH¢11.34
 - B. GH¢12.48
 - C. GH¢13.86
 - D. GH¢14.00
19. On a map, 1 cm represents 150 km. What is the actual distance between two cities if they are 3.5 cm apart on the map?
- A. 300km
 - B. 450km
 - C. 525 km
 - D. 600km
20. The ratio of girls to boys in a class is 4:3. If there are 49 pupils in the class, how many are girls?
- A. 23
 - B. 25
 - C. 27
 - D. 29