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S/No. :



# NATIONAL TEACHING COUNCIL GHANA TEACHER LICENSURE EXAMINATION (GTLE)



INDEX NUMBER	
CENTRE NAME	
SIGNATURE	

DATE: 12 - 09 - 2018

DURATION: 1 HOUR 30MINS

## PAPER 3 NUMERACY

### INSTRUCTIONS

This paper consists of two parts, A and B. Answer all questions in both parts of the question paper.

### PART A

Consists of 30 multiple-choice questions, each with four options lettered A to D. Read and evaluate all four answer choices before circling the correct or best answer.

### PART B

This part of the paper has **TWO** questions. Answer all the questions in the spaces provided under each question.

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Page numbers	Mark
<b>TOTAL</b>	



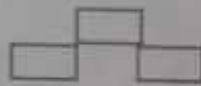
1. Students are most likely to be intrinsically motivated to learn and master mathematics when they \_\_\_\_\_

- A. know that they would be tested on their understanding of the mathematical content in the near future.
- B. believe that the mathematics they are learning is related to their lives.
- C. perceive that their performance compare favourably with that of peers in the same task.
- D. anticipate that they will receive positive reinforcement for achieving instructional objective.

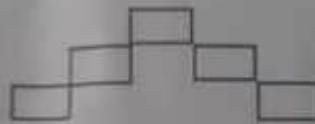
2. Study the number of boxes in the patterns below:



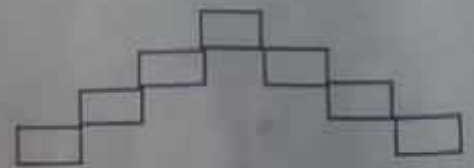
Pattern 1



Pattern 2



Pattern 3



Pattern 4

If the pattern is extended, how many boxes will be in Pattern 7?

- A. 7
- B. 9
- C. 11
- D. 13

3. A car left Nsawam at 9:45 am. It arrived in Kumasi in 3 hours 17 minutes later. What time did the car get to Kumasi?

- A. 12:02 am
- B. 12:52 am
- C. 1:02 am
- D. 1:02 pm

4. What is the next term in the pattern below?

$$4 - 4 = 0$$

$$4 - 3 = 1$$

$$4 - 2 = 2$$

$$4 - 1 = 3$$

$$4 - 0 = 4$$

$$- - = ?$$

- A.  $4 - (-1) = 5$
- B.  $4 - (-2) = 6$
- C.  $4 - 1 = 3$
- D.  $4 - 5 = -1$



5. There are  $p$  boys and  $q$  girls in a classroom. Each person had 2 textbooks. Which of these expressions represents the total number of textbooks carried to the classroom?

- A.  $2(p + q)$   
B.  $2 + (p + q)$   
C.  $2p + q$   
D.  $2pq$

6. In a game, Adjoa, Ama and Kofi each had tried 20 times at throwing balls into a basket. The table below shows the results of the game. What are the values of A and B in the table?

Name	Number of successful shots	Percentage of successful shot
Adjoa	10 out of 20	50%
Ama	15 out of 20	A
Kofi	B out of 20	80%

- A. 15% and 16  
B. 75 and 16%  
 C. 75% and 16  
D. 75% and 18

7. How many degrees does a minute hand of a clock turn through from 6:20 am to 7:00 am the same day?

- A.  $120^\circ$   
B.  $180^\circ$   
 C.  $240^\circ$   
D.  $320^\circ$

8. Six hundred copies of a book have to be packed into boxes. Each box can hold 15 of the books. Which one of the following operations could be used to find the number of boxes needed?

- A. Add 15 to 600  
 B. Divide 600 by 15  
C. Multiply 600 by 15  
D. Subtract 15 from 600



9. Which of the following statements is/are ALWAYS TRUE about natural numbers?
- I. All prime numbers are odd.
  - II. Composite numbers have more than two divisors.
  - III. The sum of any two natural numbers is odd.
- A. I & II.
  - B. I only.
  - C. II & III.
  - D. II only.
10. A company has 200 employees. Thirty-nine percent of them work in the machine room and 32% are engaged in distribution of goods. How many of the employees are engaged in other duties apart from these two?
- A. 45
  - B. 56
  - C. 58
  - D. 71
11. If you take away the sum of 248.25 and 63.17 from 890.45, what is left?
- A. 579.03
  - B. 589.03
  - C. 589.13
  - D. 689.03
12. Eleven more than 2 times Jona's age is equal to 59. How old is Jona?
- A. 23 years
  - B. 24 years
  - C.  $27\frac{1}{2}$  years
  - D. 35 years
13. Dartey recorded a mean score of 24 on five tests. What should she score on the sixth test to bring her mean score up to 26?
- A. 30
  - B. 32
  - C. 36
  - D. 40
14. A boy used two-thirds of his weekly savings to buy a textbook. If he realised that he has GH¢10.00 left, how much was the weekly savings?
- A. GH¢20.00
  - B. GH¢30.00
  - C. GH¢40.00
  - D. GH¢60.00



15. Some pages in a book on a bookshelf are missing so that page 21 is now followed immediately by page 43. How many pages are missing?

- A. 20
- B. 21
- C. 22
- D. 43

16. The population of two communities are  $1.8705 \times 10^6$  and  $9.00846 \times 10^6$ . Calculate, correct to four significant figures, the total population of the two communities.

- A.  $2.771 \times 10^5$
- B.  $2.771 \times 10^6$
- C.  $2.772 \times 10^6$
- D.  $1.088 \times 10^7$

17. Mr Adabor bought three items priced at GH¢65.50, GH¢36.45 and GH¢15.78. He paid with three GH¢ 50.00 notes. How much change did he receive?

- A. GH¢32.27
- B. GH¢32.73
- C. GH¢33.27
- D. GH¢33.73

18. The adinkra symbol shown below is called "boa me na me mmoa wo" which literary means "help me and let me help you" and symbolizes "cooperation, interdependence". How many symmetries has the symbol?

- A. 1
- B. 2
- C. 3
- D. 4



19. Dora has a bag containing 3 blue tennis balls. Jennifer has a bag containing 2 black tennis balls. Their balls are all identical except for colour. The two girls put the balls together into one big bag. If a ball is picked at random from the big bag, what is the probability that the ball is black?

- A.  $\frac{1}{10}$
- B.  $\frac{1}{5}$
- C.  $\frac{2}{5}$
- D.  $\frac{3}{5}$

20. A school wants to fence its rectangular playing field measuring 118 m by 92 m with wire mesh. How many metres of wire mesh will be needed to complete the fencing?

- A. 200 m
- B. 410 m
- C. 420 m
- D. 440 m



21. Which one of the following is *not true* about a parallelogram?

- A. A diagonal separates the parallelogram into two congruent triangles.
- B. The diagonals of a parallelogram bisect each other at the right angles.
- C. The opposite angles of a parallelogram are congruent.
- D. The opposite sides of a parallelogram are congruent.

22. If the population of a village increases by 97, it will reach at least 4,050 people. Which one of the following inequalities represents the statement correctly?

- A.  $p + 97 < 4,050$
- B.  $p + 97 \leq 4,050$
- C.  $p + 97 \geq 4,050$
- D.  $p + 97 > 4,050$

23. A rectangular playing field is 20 metres long. A straight path is cut across the field along one of its diagonals. If the length of the path is 25 metres, how wide is the playing field?

- A. 5 m
- B. 15 m
- C. 25 m
- D. 45 m

24. It took a computer lab assistant 35 minutes to fix a problem on 6 computer units. If the lab assistant works at the same rate, how long will it take to fix the same problem on an additional 24 computers?

- A. 1 hour and 40 minutes
- B. 2 hours and 20 minutes
- C. 2 hours and 33 minutes
- D. 4 hours and 4 minutes

25. The capitation grant for a school increased from GH¢4,800.00 to GH¢6,000.00 in one year. What was the percentage increase in the grant?

- A. 18%
- B. 20%
- C. 24%
- D. 25%

26. An entrepreneur offers the following two options for a job that takes 8 days:

- i. Receiving GH¢1,000.00 for the period.
- ii. Receiving GH¢10.00 on the first day with the amount doubling each day.

Which of the options will yield a higher wage?

- A. Both options are the same
- B. Not easy to determine
- C. Option I
- D. Option II

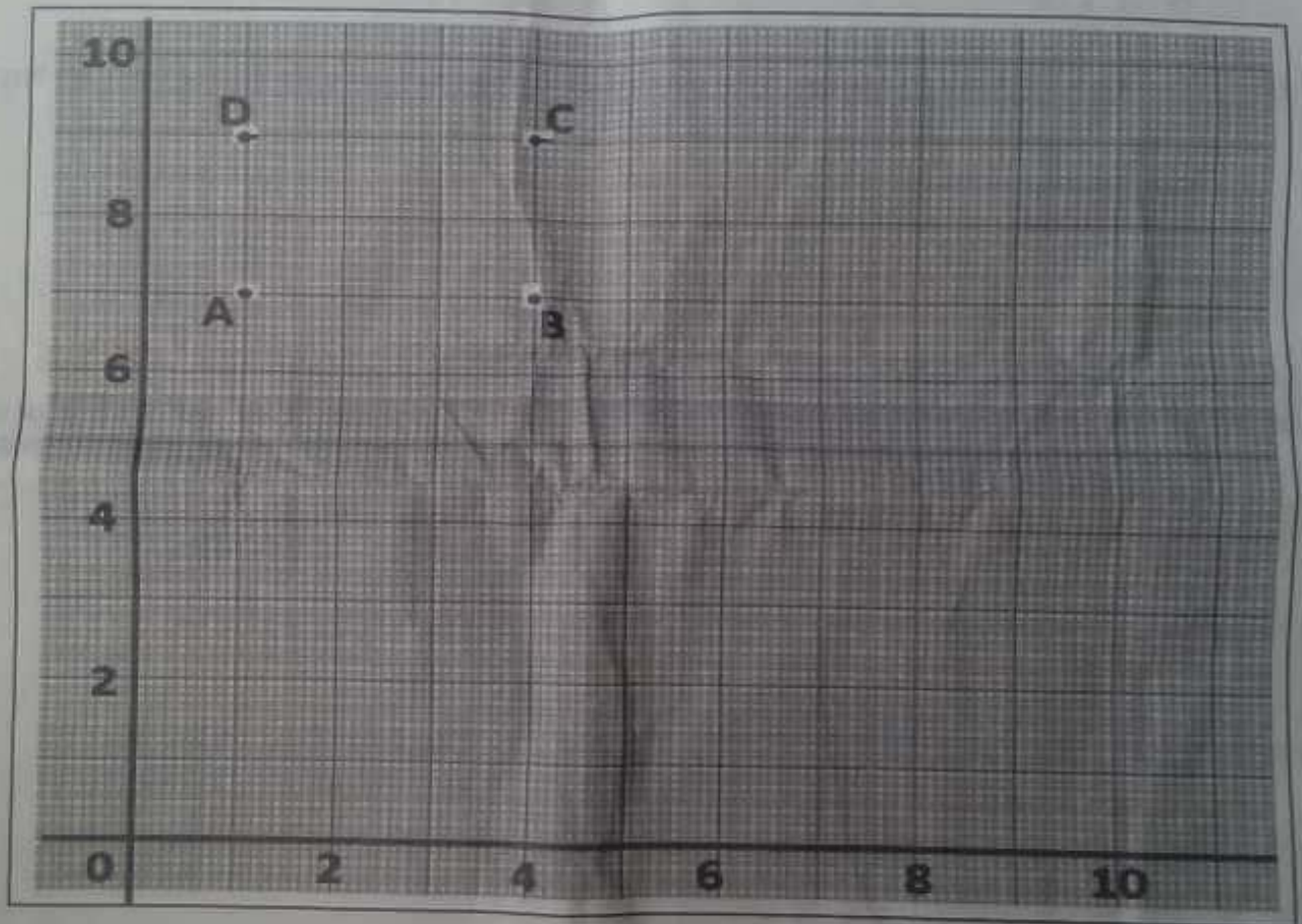


27. The cost of 3 pencils and 2 exercise books is GHc 3.50. The cost of 5 similar pencils and 4 exercise books is GHc 6.50. Find the cost of 2 pencils.
- A. GHc 0.50
  - B. GHc 1.00
  - C. GHc 1.50
  - D. GHc 2.00
28. Adzovi is 5 years older than her brother. Which one of the following expressions represents Adzovi's age if her brother is  $x$  years old?
- A.  $5x$
  - B.  $5 + x$
  - C.  $5 - x$
  - D.  $x - 5$
29. There are 45 pupils in a class. What percentage of the class are girls if 18 of them are boys?
- A. 40%
  - B. 45%
  - C. 60%
  - D. 67%
30. Jemima wants to send letters to 16 of her friends. Half of the letters will need a sheet of paper each to print and the other half will need 2 sheets each to print. How many sheets of paper will be needed altogether?
- A. 12
  - B. 16
  - C. 20
  - D. 24

## PART B

Part B consists of ONE essay and ONE comprehension question to be answered on the paper.

1. (a) A school hired a bus for an excursion. They were charged GH¢500.00 deposit plus GH¢4.00 for every kilometer covered by the bus. If at the end of the excursion they paid a total of GH¢1,260.00 for the use of the bus, calculate the total distance covered by the bus.
- (b) A rectangle ABCD is drawn on a grid as shown below. Use the information to answer the questions that follow.



- Write down the coordinates of the vertices A, B, C and D of the rectangle.
- Write down the coordinates of the point where the diagonals of the rectangle ABCD intersect.
- Draw on the same grid a rectangle  $A_1B_1C_1D_1$  which is three times as long and two and a half times as wide as rectangle ABCD.
- What is the ratio of the perimeter of rectangle ABCD to the perimeter of rectangle  $A_1B_1C_1D_1$ .





2. Developing students' fundamental knowledge and understanding of mathematical concepts is an important goal of teaching mathematics. Explain THREE classroom practices a mathematics teacher has to avoid in order to increase students' chances of achieving this aim in Ghanaian schools.

A large, empty rectangular box with a thin black border occupies the majority of the page below the question. It is intended for the student to write their answer to the question.