



UNIVERSITY OF GHANA

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DEPARTMENT OF TEACHER EDUCATION
SCHOOL OF EDUCATION AND LEADERSHIP
COLLEGES OF EDUCATION

END OF SEMESTER TWO EXAMINATIONS FOR LEVEL 300, 2021/2022
B.ED. PROGRAMME

COURSE CODE: TEJS 328

COURSE TITLE: TEACHING AND ASSESSING JHS MATHEMATICS(ADVANCED)

Instruction: Answer all questions in Section A and any three questions in Section B.

Time: 2 hours

SECTION A

[25 Marks]

Answer all the questions in this section.

1. Which one of the following is the main reason for formative assessment in mathematics classroom?
 - A. find out the best performing student in the class.
 - B. promote learners to the next class.
 - C. improve teaching and learning.
 - D. report learners to parents.

2. Which one of these skills' demonstrates an understanding of addition facts?
 - A. Explaining the fact.
 - B. Copying of facts.
 - C. Memorizing the facts.
 - D. Reciting the facts.

3. A learner who continually ask "Why" and "How do we know" about a concept in mathematics is said to have developed _____
- cultural values.
 - disciplinary Values.
 - practical values.
 - preparatory values.
4. A JHS learner discover that John makes a commission of 2% when a house is sold by his company. How much money will John make as commission if his company sells a house for \$300,000.00?
- \$110.50
 - \$599.00
 - \$600.00
 - \$6000.00
5. Find out what principal will yield an interest of ₦240,000 in 4years at 20% per annum simple interest.
- ₦ 120,000.00
 - ₦ 300,000.00
 - ₦ 480,000.00
 - ₦ 900,000.00
6. A set of furniture was sold for GHc 30 000.00 at a profit of 20%. Find the cost price?
- GHc 24 000.00
 - GHc 18 000.00
 - GHc 25 000.00
 - GHc 20 000.00
7. Tutors are required to pay 4.5% of their salaries into a school bungalow building project. If a Tutor's salary is GHc 120 000.00. How much does he/she pay into the building project?
- GHc 4,400.00
 - GHc 10,800.00
 - GHc 6,000.00
 - GHc 5,400.00
8. The length of a rectangle is three times its width. If its perimeter is 24 cm. find its width?
- 3 cm
 - 4 cm
 - 6 cm
 - 8 cm

9. What will be an expression for the perimeter of triangle with base length 7cm long and each of the other two side is x cm.
- $x + 7$
 - $x + 14$
 - $2x + 14$
 - $2x - 7$
10. How many lines of symmetry has a rhombus
- 2
 - 3
 - 4
 - 0
11. The point p moves in a plane such that it is always at equal distance from two fixed points, A and B in the same plane. Which of these is the locus of the point p?
- The bisector of the angle PAB
 - A circle with centre B and radius AB
 - A circle with AB as the diameter
 - The perpendicular bisector of line AB .
12. There are 18 girls and 22 boys in a class. A leader is to be chosen at random from the class. What is the probability that the leader will be a girl?
- $\frac{1}{8}$
 - $\frac{9}{20}$
 - $\frac{11}{20}$
 - $\frac{9}{11}$
13. If a number is selected at random from the table A, what is the probability that the number is 5?

Table A

Number	1	3	5	7	9
Frequency	25	15	8	10	2

- A. $\frac{8}{25}$
- B. $\frac{4}{25}$
- C. $\frac{1}{12}$
- D. $\frac{2}{15}$

14. Find the image of the point $(1, 2)$ after reflection in the line $y = -1$

- A. $(-1, 4)$
- B. $(-1, -4)$
- C. $(1, -4)$
- D. $(1, 4)$

15. H $(7, 3)$ is the image of the point G under the translation $T = \begin{pmatrix} 2 \\ 5 \end{pmatrix}$, find the coordinates of

- G.
- A. $(5, -2)$
 - B. $(5, 2)$
 - C. $(-5, 2)$
 - D. $(-5, -2)$

16. A JHS learner realizes that Mr. Mensah, whose annual salary is ₦ 2,800,000 has a tax-free allowance of ₦550,000. If the income tax is 25% of his taxable income, how much tax does he pay in a month?

- A. ₦ 46,875.00
- B. ₦47,916.67
- C. ₦58,333.33
- D. ₦69,791.67

17. The ratio of the measure of each interior angle of a regular octagon to that of the regular dodecagon is given as _____?

- A. 8: 12
- B. 9: 10
- C. 12: 8
- D. 4: 5

18. Express $\log_{10}2 - 3\log_{10}3 + 2\log_{10}5$ as a single logarithm.
- A. $\log_{10}\left(\frac{20}{27}\right)$
 - B. $\log_{10}\left(\frac{27}{20}\right)$
 - C. $\log_{10}\left(\frac{27}{50}\right)$
 - D. $\log_{10}\left(\frac{50}{27}\right)$
19. Find the least whole number which must be added to 207 to make it divisible by 17
- A. 0
 - B. 3
 - C. 13
 - D. 14
20. Suppose it is 3 o'clock now, and the minute hand of the clock rotates through 270° , what time will it be after the rotation.
- A. 3.45min.
 - B. 4.45min.
 - C. 2.45min.
 - D. 5.45min.
21. The area of a square field is 324m^2 . Find the length of a side of the field.
- A. 20m
 - B. 19m
 - C. 21m
 - D. 18m
22. Assuming a trader buys milk at $\$x$ per tin and sells them at a profit of $\$y$ per tin and supposing she sells five tins of milk, how much does she receive?
- A. $\$5(x+y)$
 - B. $\$5x+\y
 - C. $\$x + \$5y$
 - D. $\$5x+\5

23. If $a = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$ and $b = \begin{pmatrix} 3 \\ -4 \end{pmatrix}$, find $2a + b$

A. $\begin{pmatrix} 7 \\ -2 \end{pmatrix}$

B. $\begin{pmatrix} 5 \\ -3 \end{pmatrix}$

C. $\begin{pmatrix} 8 \\ -7 \end{pmatrix}$

D. $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$

24. If $\log_{10} 3 = a$ and $\log_{10} 5 = b$, write down, in terms of a and b, the value of $\log_{10} 75$.

A. $2a$

B. ab^2

C. $a+2b$

D. $a+b^2$

25. If one-third of a number is added to one-fifth of the same number, the result is 8. Find the number.

A. 3

B. 5

C. -15

D. 40

SECTION B

[75 Marks]

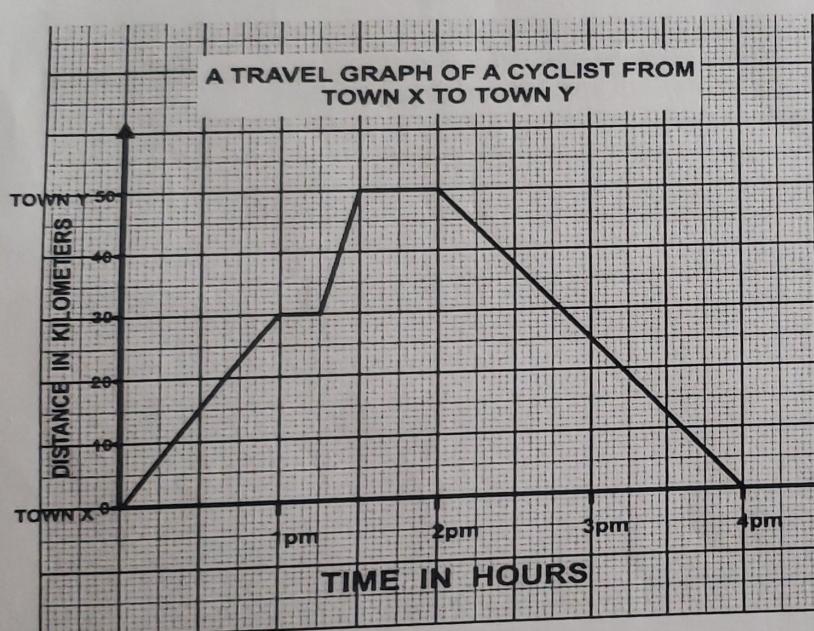
Answer any three questions in this section.

1a. Outline three differences between the objective-based JHS curriculum and [12marks] the Standard based curriculum

b. What is Assessment in mathematics education? [3 marks]

c. Mention the two main assessments used in the Ghanaian education system [4 marks]

The travel graph describes the journey of a cyclist from town X to town Y



d. What was the average speed for the return journey from town Y to town X [6 marks]

2a. A high-quality car costs \$18500 and depreciates by 8% annually. Calculate [10 marks] what the car will be worth after 5 years?

b. Mrs. Korletey sold some items to her customers and opened a savings account [15 marks] with a sum of Gh¢1000.00. Her account earns 7% compound interest

annually. If she does not withdraw or deposits any money for three years, how much will be in her account?

- 3a i. How would you help JHS 2 learner to draw the triangle ABC using the points A(2,2), B(6, 20) C(4, 6), Join AB, BC and AC [18 marks]
- ii. Draw the image triangle $A_1B_1C_1$ of triangle ABC under a clockwise rotation of 90^0 about the origin where $A \rightarrow A_1$, $B \rightarrow B_1$, and $C \rightarrow C_1$
- 3b How would you help JHS 2 learner to identify the similarities and differences between line of symmetry and rotational symmetry of plane shapes using two examples. [7 marks]
- 4a Ama woke up in the morning to fill a tank full with one side open in the form of a cylinder with a height of 140 cm tall and a base radius of 5 cm. How would you help JHS 3 learner to find; [20 marks]
- i. The volume of the cylinder given $\pi = 3.142$
- ii. If the cylinder has been reduced to form a cone; how would you help JHS 3 learner to find the volume of the new object.
- 4b simplify $\frac{\log a^2 - \log a}{\log a}$ [5 marks]
- 5a Explain five reasons in favour of preparing a lesson plan for teaching mathematics. [10 marks]
- 5b Explain the following concepts in Micro lesson planning:
- i. Plan
 - ii. Teach
 - iii. feedback
 - iv. re-plan
 - v. Re-teach
- $\pi r^2 + \pi r^2 + 2\pi rh$
 $2\pi r s$
- [3 marks]
[3 marks]
[3 marks]
[3 marks]
[3 marks]