STUDENT'S ID NO: _____ SIGNATURE: _____

UNIVERSITY OF GHANA

DEPARTMENT OF TEACHER EDUCATION
SCHOOL OF EDUCATION AND LEADERSHIP
COLLEGES OF EDUCATION
END OF YEAR TWO SEMESTER TWO EXAMINATIONS, 2022/2023
B.ED. PROGRAMME

COURSE CODE: TEJS 328
COURSE TITLE: **TEACHING AND ASSESSING JUNIOR HIGH SCHOOL 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.

In this section, each question is followed by four options lettered A to D. Read each question carefully and circle the letter that corresponds with the best option on the question paper. Each question carries (**1 mark).**

1. Find the total surface area of a square shaped box having a length of 2 m for its side.
   A. 22 m^2
   B. 24 m^2
   C. 47 m^2
   D. 48 m^2

2. Find the value of $log_9 \frac{1}{6561}$.
   A. -5
   B. -4
   C. -3
   D. -2

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3. What shape are the lateral faces of a pyramid?

   A. Circle
   B. Pentagon
   C. Square
   D. Triangle

4. Find the volume of a cone which has a diameter of 22cm and a slant height of 61cm.

   A. $7606cm^3$
   B. $8213cm^3$
   C. $9213cm^3$
   D. $10213cm^3$

5. How many faces, edges, and vertices does a tetrahedron have?

   A. five vertices, five triangular faces, six edges
   B. four vertices, four rectangular faces, six edges
   C. four vertices, four square faces, six edges
   D. four vertices, four triangular faces, six edges

6. Kofi went to a bank to deposit an amount of $33.38. He had some dollar bills and coins in his wallet. Help Kofi find out how to deposit the money at the bank. He can deposit:

   A. (3 x $10) + (3 x $1) + (1 x 25 ¢) + (13 x 1 ¢)
   B. (3 x $1) + (3 x $1) + (1 x 25 ¢) + (13 x 1 ¢)
   C. (3 x $10) + (3 x $1) + (3x 25 ¢) + (13 x 1 ¢)
   D. (3 x $10) + (3 x $1) + (25x 2 ¢) + (13 x 1 ¢)

7. Calculate the area of a triangle whose two sides are 4cm and 6cm and whose inclusive angle is 60^0.

   A. $6cm^2$
   B. $8cm^2$
   C. $10cm^2$
   D. $21cm^2$

8. Asantewa paid ₵50 for a T-shirt at a sale, while the price tag was ₵40. Find the tax rate in percentages.

   A. 25%
   B. 50%
   C. 70%
   D. 75%

9. Which one of the following is NOT a question asked by students during formative assessment?

   A. How can I close the gap?
   B. What is my score now?
   C. Where am I now?
   D. Where am I going?

10. Find the volume of a hemisphere with a diameter of 8cm.

    A. $134.1cm^3$
    B. $201.1cm^3$
    C. $1072.8cm^3$
    D. $1609.1cm^3$

11. Which of the following formulas represents the lateral area of a triangular pyramid?

    A. 4 pl
    B. 3 pl
    C. $\frac{3}{2}pl$
    D. $\frac{2}{3}pl$

12. How many lines of symmetry does a parallelogram have?

    A. 0
    B. 1
    C. 2
    D. 3

13. How many faces, vertices, and edges does a square-based pyramid have?
    A. Five faces, five vertices, eight edges
    B. Four faces, eight vertices, 5 edges
    C. Four faces, four vertices, four edges
    D. Four faces, four vertices, nine edges

14. Which one of the following is NOT a characteristic of diagnostic assessment?

A. They are low stake; hence they do not usually contribute to scores.
B. They help teachers diagnose the students' *skills and knowledge.*
C. They help teachers decide what to focus on in class while teaching.
D. They must be written before they can diagnose students' problems.

15. Professor Ramson brought his goods from London and Germany to Tema Harbour to be sent to Enchi. What is the name of the tax he will pay before he can offload his goods from Tema Harbour?

A. Company tax
B. Cooperate tax
C. Exercise and customs tax
D. Value-added tax

16. If the scale of a map is 1:150,000, find the actual distance on the map of $3\frac{1}{2}cm$.

A. 3. 75k
B. 4.67km
C. 5. 25km
D. 5.50km

17. What is the lateral surface area of a cone whose dimensions are a diameter of 12cm and a height of 10cm?

A. $150.85cm^2$
B. $188.57cm^2$
C. $219.87cm^2$
D. $1131.42cm^2$

18. Which one of the following shapes has two lines of symmetry?

A. Equilateral
B. Isosceles Triangle
C. Rectangle
D. Trapezium

19. All the following are the benefits of *assessment for learning,* EXCEPT that students _____.

A. are more motivated to be engaged while learning.
B. are actively involved in their own assessment.
C. experience more anxiety while taking the test.
D. take responsibility for their own learning.

20. A driver needs 8 litres of petrol in his car if he has to travel 96km. How many litres of petrol will he need to travel 144km?
    A. 6
    B. 8
    C. 10
    D. 12

21. A pupil located the point Q in the number plane such that Q is 3 units to the left of the y-axis and 2 units below the x-axis. Which one of the following is the point Q?

    A. (-3,-2)
    B. (-3,2)
    C. (3, -2)
    D. (3.2)

22. When you want to teach pupils rotation practically on graph paper, which of these instruments is appropriate?

    A. Protractor
    B. Ruler
    C. Set of compass
    D. Set of dividers

23. Which one of the following statements is TRUE about assessment?

    A. Formative assessments are *for* learning, while summative assessments are *of* learning.
    B. Formative assessments are *of* learning, while summative assessments are for learning.
    C. Formative assessments are used at the end of a project, unit, course, or semester.
    D. Summative assessment provides feedback that could help improve pupils' learning.

24. Robert purchased a car worth $ 48,000 he borrowed the money from the bank at 10% per annum for a period of 4 years. How much amount does he has to pay after the period?

    A. $ 4,800
    B. $ 5,300
    C $ 19,200
    D $ 67,200

25. The assessment that teachers use to find out what their learners know and can do, and what confusions, preconceptions, or gaps they might have is called_____.
    A. Assessment as learning
    B. Assessment for learning
    C. Assessment in learning
    D. Assessment of learning

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SECTION B

[75 Marks]

Answer any **THREE** questions in this section.

1 (a) A goat is tied to a post at the centre of a 40-metre square field by a rope 20 metres long. What is the area of the field where the goat cannot graze? 6 Marks

(b) A retailer buys an article from the wholesaler for ¢800, and the wholesaler charges a sales tax at the prescribed rate of 8.5%. The retailer fixes the price at ¢ 1000 and charges sales tax at the same rate. Apply the value-added tax system of sales tax calculation to answer the following questions:

i. What is the price that a consumer has to pay to buy the article? 2 Marks

ii. Find the input tax and output tax for the retailer. 4 Marks

iii. How much VAT does the retailer pay to the government? 2 Marks

(c) i. Explain any **three** differences between a salary and a wage. 6 Marks

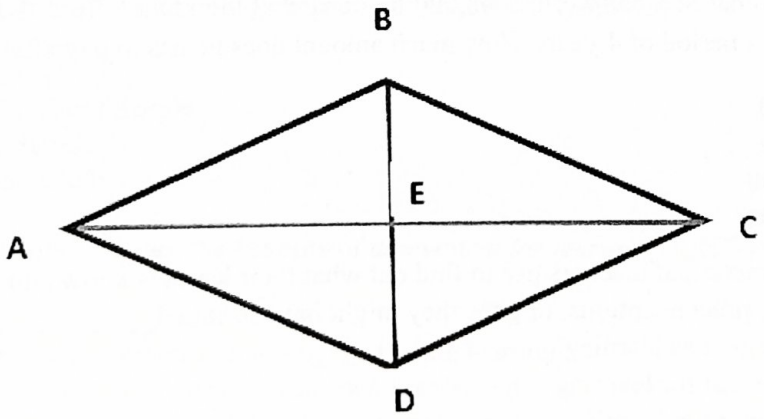
ii. Find the volume of a sphere whose diameter is 22mm ($\pi = \frac{22}{7}$). 5 Marks

2 (a) i. What is the **MAIN** difference between a rhombus and a square? 3 Marks

ii. Explain any two differences between a kite and a parallelogram. 4 Marks

(b) Miss Ghana Most Beautiful installed a triangular pedestal in a senior high school in Enchi, measuring 15 cm by 16 cm by 19 cm, on which she plans to thank the students for their kind votes during the competition. The school head girl has been instructed to use the school fabric to cover solely the podium's flat surface, where the beauty queen will place the paper containing her speech. Calculate the area of the cloth. 8 Marks

(c) Given the rhombus ABCD below, where $\overline{CD}$= 17 and $\overline{AE}$ = 8, find the area of the rhombus. 10 Marks



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3 (a) -1 means the point (-3, 5) is three units from the y-axis and on the left of it, and 5 means the point (-3, 5) is 5 units from the x-axis and above it. 4 Marks

(b) State any five similarities between a rhombus and a square. 10 Marks

(c) Boateng wants to buy a cylindrical can that will hold 2 gallons of oil. The radius of the can is 5 inches. What should be the height of the can? $(Take\ \pi = \frac{22}{7})$. 11 Marks

4 (a) Show, in sequences, how you would lead a JHS pupil to discover the rule of indices $a^m \div a^n = a^{m-n}$ 10 Marks

(b) State any five differences between a rhombus and a square. 10 Marks

(c) What is the height of a cylindrical Christmas candle, (to the nearest whole number) whose volume is 450.16cm^3 and whose radius is 3cm? 5 Marks

5 (a) Briefly describe an activity you would do to help a JHS class acquire the concept that one litre of water is the same as 1000 cm^3 of water. 7 Marks

(b) Calculate the area of a trapezium whose two parallel sides are of lengths 7m and 9.8 m and are 5.5m apart. The non-parallel sides are 4.8m and 6.4m. 10 Marks

(c) Enumerate any **four** (4) differences between the traditional assessment and the innovative assessment. 8 Marks