FINALPREPS ASSESMENTS AND EVALUATIONS

Mock Examination for B.E.C.E Candidates

November 2025

MATHEMATICS 2 & 1
(ESSAY AND OBJECTIVE TEST)

2 hours

Name: .....

Index Number: .....

INSTRUCTIONS

Do not open this booklet until you are told to do so. While you are waiting, read and observe the following instructions carefully. Write your name and index number in ink in the spaces provided above.

This booklet consists of two papers. Answer Paper 2 which comes first, in your answer booklet and Paper 1 on your Objective Test answer sheet provided. Paper 2 will last 60 minutes after which the answer booklet will be collected. Do not start Paper 1 until you are told to do so. Paper 1 will last 60 minutes.

FINALPREPS ASSESMENTS AND EVALUATIONS

MOCK 2 EXAMINATION – 2025/2026

MATHEMATICS

PAPER 2

Answer **four** questions only

All questions carry equal marks

All workings must be clearly shown. Marks will **not** be awarded for correct answers without corresponding working.

1. (a). Given that $A = \{factors\ of\ 12\}$, $B = \{positive$ even $numbers\}$ are subsets of $\mu = \{x: 1 \leq x \leq 20,$ $where\ x\ is\ a\ counting\ number\}$.

i. List the element of $A \cap B$

ii. List all the subset in $A \cap B$

(b). If $\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$

i. express $R_2\ in\ terms\ of\ R\ and\ R_1$

ii. using the results in (b)i, find the value of R_2 when $R_1 = 6\ and\ R = 2$

2. (a) Evaluate $\frac{000 \times 0.15}{0.05 \times 0.002}$, leaving your answer in standard form.

(b) A rectangular garden of xcm by 350cm is to be fenced with a 32m wire mesh. Calculate

i. the value of x

ii. the area (in metres) of the garden.

3. (a) Three points X, Y, and Z are located on a plane such that $X(2, 6)$, $Z(-4, 1)$ and $XY = \binom{-2}{5}$ Calculate:

i. the coordinates of the point Y.

ii. $|OY|$

(b) A cylindrical tank contains 6000 litres of water.

i. If $\frac{1}{12}$ of the water is used for irrigation, find the volume of water used.

ii. What is the ratio of the volume of water left in the tank to the volume of water used?

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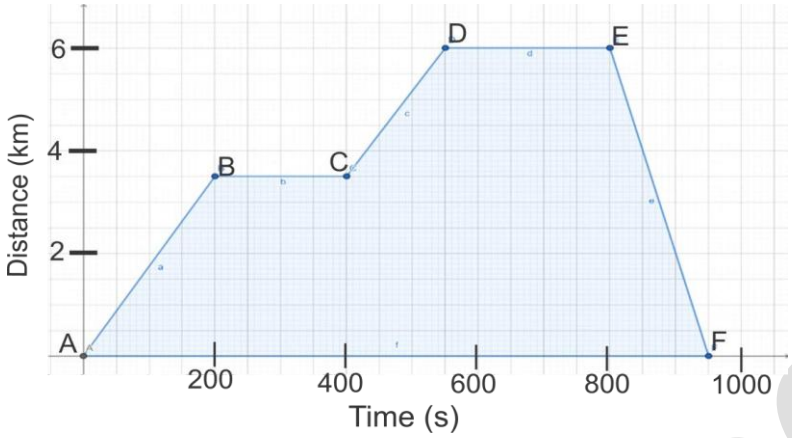
4. (a) The diagram below shows the graph of the journey embarked by a motorist who travelled from Anom(A) to Edukrom(E) but made some stops at Subin(B) and Nkwanta(D).



Calculate:

i. Calculate the distance from Anom (A) to the final stop at Nkwanta (D).
ii. Calculate the total duration (in minutes) the motorist spent at rest (stops).
iii. Calculate the average speed of the journey from E back to F.

(b) Simplify $3\sqrt{72} + 2\sqrt{80} - 4\sqrt{2} + 5\sqrt{5}$.

5. **(a)** The marks obtained by a class in a quiz are:

45, 52, 61, 73, 88, 70, 50, 54, 40, 75, 35, 75, 74, 60, 80, 62

75, 82, 71, 64, 53, 41, 62, 54, 64, 78, 60, 73, 61, 78, 87, 90

i. Construct a stem and leaf plot for the distribution

ii. Find the median mark.

(b) The interior angles of a pentagon are $110°$, $130°$, and $95°$. Find the size of the remaining two angles if one is
twice the other. Find the value of the smallest angle in the pentagon.

6. **(a)** Mrs. Appiah borrowed $GH¢\ 7{,}200.00$ to start a business. If she borrowed at a rate of 5% simple interest per annum for 9 months, find the interest paid.

(c) A woman shared an amount of money among her three children. The first child had $\frac{1}{4}$ of the amount. The second child had $GH¢\ 60.00$ more than the first. If the third child had $GH¢\ 340.00$, find:

i) The total amount shared.
ii) How much the first child received.
iii) How much the second child received.

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MATHEMATICS **1**
OBJECTIVE TEST (60 minutes)
*Answer **all** questions.*

1. If $8n + 3 = 19$ find the value of n.

A. 6 B. 4 C. 3 D. 2

2. Two brand of microwave oven A and B cost GH¢6,000.00 and GH¢8,000.00 respectively. A firm budgeted for GH¢80,000.00 to buy microwave oven. If the firm budget for 10 units of brand A instead of brand B. How much did it save?

A. GH¢74,000.00 B. GH¢15,000.00

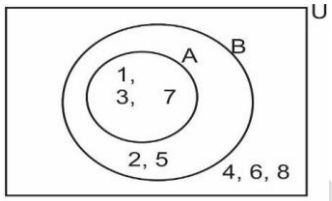
C. GH¢10,000.00 D. GH¢20,000.00

3. Kofi and Esi shared an amount of money in the ratio 2:5. If Esi used GH¢150.00 more than Kofi, how much did they share?

A. GH¢350.00 B. GH¢250.00

C. GH¢450.00 D. GH¢550.00

In the diagram A and B are to sets and U the universal set. Use the information to answer question 4 and 5.



4. Find A∩ B

A. {1, 3,7} B. { 3,7}

C. {1,2, 3,7} D. {4,6,8}

5. How many elements are in the set B?

A. 3 B. 5 C. 7 D. 8

6. John rode a bicycle to a point such that he is always the same distance from two villages M and N. Which of the following best describes the locus of John?

A. An arc passing through MN

B. A circle passing through line MN

C. Straight line MN

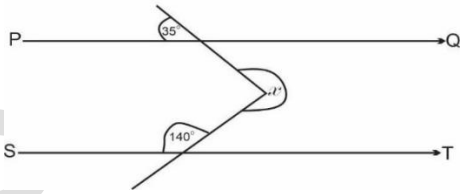
D. Perpendicular bisector of line MN

7. A bag of maize weight 4kg. If the empty bags weighs 150g. Find the weight of the maize.
[$1kg = 1000g$]

A. 3.500kg B. 4.350kg
C. 4.150kg D. 3.850kg

8. Andrews drew three lines such that the length of the first one is 10cm, the second is 15cm longer than the first one and the third is 9cm less than the second. Find the length of the third line.

A. 4cm B. 14cm C. 16cm D. 34cm



NOT DRAWN TO SCALE

9. In the diagram, line PQ is parallel to line ST. Find the value of the angle marked x.

A. 290° B. 285° C. 225° D. 140°

10. A hawker is carrying a basket load of three types of vegetables: tomatoes, okro, and onions. If $\frac{2}{5}$ are tomatoes and $\frac{6}{25}$ are okro, what percentage of the fruits are onions?
A. 9% B. 18% C. 36% D. 64%

11. Araba is three years younger than her sister. If the sum of their ages is 17 years, find Araba's age.
A. 7 years B. 8 years
C. 9 years D. 10 years

12. A number of mangoes are shared among 50 pupils, and each got 15 oranges. If the same number of oranges are shared equally among 30 students, how many will each pupil get?
A. 25 B. 20 C. 15 D. 13

13. If the bearing of S from T is 120°, find the bearing of T from S.
A. 300^0 B. 150^0 C. 100^0 D. 060^0

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14. Given the vector $\boldsymbol{a} = \begin{pmatrix} 5 \\ -1 \end{pmatrix}$ and $\boldsymbol{b} = \begin{pmatrix} -4 \\ 2 \end{pmatrix}$, find $2\boldsymbol{a} + \boldsymbol{b}$

A. $\begin{pmatrix} -6 \\ 0 \end{pmatrix}$ B. $\begin{pmatrix} 0 \\ 6 \end{pmatrix}$ C. $\begin{pmatrix} 6 \\ 0 \end{pmatrix}$ D. $\begin{pmatrix} 0 \\ -6 \end{pmatrix}$

15. Simplify $\frac{27^{m+1}}{3^{m+2}}$

A. 3^{2m} B. 3^{2m-1} C. 3^{2m+1} D. 3^{2m+2}

16. There are 15 white and 25 black identical balls in a bag. If a ball is selected at random from the bag, find the probability that it is white

A. $\frac{1}{25}$ B. $\frac{3}{8}$ C. $\frac{1}{15}$ D. $\frac{5}{8}$

17. The area of a rectangle is $18cm^2$. If the width is 2cm. Find the perimeter

A. 18cm B. 20cm C. 22cm D. 36cmm

18. An article which cost GH¢600.00 was sold at a discount of 10%. Find the selling price

A. GH¢60.00 B.GH¢504.00

C. GH¢560.00 D. GH¢540.00

19. A frog leaps in such a way that its distance in meters, from its stationary position after each leap is given by 4, 7, 10,… Find the distance from the starting point to the 10th leap.

A. 28 B. 31 C. 34 D. 37

20. A truck departed from Kumasi at 9;15pm and arrived in Tamale at 2:45am the next day. How long did the journey take?

A. 4hours 20mins B. 4hours 30mins
C. 5hours 30 mins D. 5hours 20mins

21. Madam Joyce wants to know which of the teachers in her school is liked best by most of the students. Which of the following is most suitable for collecting data

A. Experiment B. Database
C. Observation D. Questionaire

22. Mensah packed 1800 mangoes into several boxes, if each box contained 120 mangoes, how many boxes were fully packed?

A. 15 B. 16 C. 17 D. 18

23. The cost of three items at a shop are GH¢72.00, GH¢1,105.00, and GH¢216.00. If a customer bought all the three items and received a change of GH¢107.00, how much did he initially give the shop keeper?

A. GH¢1300.00 B. GH¢1400.00
C. GH¢1500.00 D. GH¢2000.00

The table shows the results when a student tossed a die many times. Use the information to answer questions 24 and 25.

No. of die	1	2	3	4	5	6
Frequency	4	3	3	2	3	5

24. Find the mode.

A.3 B. 4 C. 5 D. 6

25. How many times did the student throw the die?

A. 6 B. 18 C. 20 D. 21

26. A story book contains 50 pages. If a student reads 10 pages per hour, find the relationship between the number of unread pages (N) and time (t).

A. $N = 10t + 50$ B. $N = -10t + 50$
C. $N = \frac{1}{10}t + 50$ D. $N = 10t - 50$

27. In how many years will $GH¢100{,}000.00$ amount to $GH¢200{,}000.00$ at 5% per annum simple interest?

A. 5 years B. 15 years
C. 10 years D. 20 years

28. Expand and simplify $6(7a - 4) - 3(8a + 9)$

A. $18a - 3$ B. $18a + 51$
C. $42a - 27$ D. $66a - 3$

29. Factorize $xy + 5x + 2y + 10$

A. $(x + 5)(2y + 10)$ B. $(x + 2)(y + 10)$
C. $(x + 5)(y + 2)$ D. $(x + 2)(y + 5)$

30. Mr Danso bought 200 bags of maize for his farm animals. If he used 60 bags to feed the animals, find the percentage of maize left.

A. 70% B. 60% C. 50% D. 40%

31. A woman spends $GH¢280.00$ out of his weekly wage of $GH¢350.00$ and saves the rest. What percentage did she save?

A. 10% B. 15% C. 20% D. 25%

32. A farmer feeds 10 goats with 250kg of maize. How many goats can he feed with 100kg of maize?

A. 2 B. 8 C. 4 D. 10

33. Solve $2^x - 8 \times 2^0$

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A. $x = 3$ B. $x = 2$ C. $x = -2$ D. $x = -3$

34. John has 4 one cedi notes and orders a cake for $GH¢$ 1.75 and three toffees at 50p each. How much does he have left?

A. GH¢ 0.75 B. GH¢ 1.25p
C. GH¢ 1.75p D. GH¢ 2.25p

35. Which of the following inequalities represent the number line?

A. $x < 2$ B. $x \leq 2$ C. $x > 4$ D. $x \leq 4$

36. Multiply $(4a - 7)$ by $(4a + 7)$

A. $64a^2 - 49$ B. $16a^2 - 49$

C. $64s^2 + 49$ D. $16a^2 + 49$

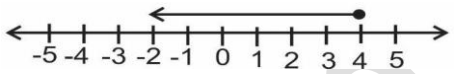
37. The population of a school is 86792. What is this number to two significant figures?

A. 86700 B. 87000 C. 867 D. 86

38. Find the least value of the following numbers.
$-1, \quad 0, -6, -3$

A. 0 B. -3 C. -6 D. -1

39. Describe the set of $A = \{2,3,5,7,11,13,17,19\}$ in words.



A. $A = \{prime\ numbers\ less\ tha\ 30\}$

B. $A = \{factors\ of\ 18\}$

C. $A = \{odd\ numbers\ up\ to\ 19\}$

D. $A = \{whole\ numbers\ greater\ than\ 25\}$

40. What is the missing number in the sequence - 7, -3, 1, _____, 9?

A. -2 B. 5 C. 6 D. 8

END OF PAPER 1

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