



END OF TERM 2 EXAMINATIONS

MATHEMATICS

PAPER 2

Essay

Answer four questions only.

All questions carry equal marks

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

$$\frac{0.0225 \times 0.00081}{0.027 \times 0.00015}$$

1. a) Simplify 0.027×0.00015 , leaving your answer in standard form.
 - b) There are 52 floors in a hospital and each floor has 374 beds. Find the number of patients that can stay in the hospital. Use the distributive property and express your answer in 2 significant figures.
 - c) Write the following figures in words;
 - i. 312,580,747
 - ii. 400,001
 - iii. 17,045,371
 - d) Write the place and value of 0 in the number 211,508,647.
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2. a) Fifty students in a school took an examination in English and Mathematics. If 12 of them passed English only, 25 passed in both English and Mathematics and 5 of them failed in both subjects, find

- i. The number of students who passed in English.
- ii. The number of students who passed only one subject.
- iii. Illustrate the information on a Venn diagram.

b) Express 17.8996 in 2 decimal places.

c) Simplify $2\frac{5}{6} - 1\frac{3}{4}$

3. a) A man gave some money to his 3 children Edna, Pili and Keziah. Edna received twice as Keziah and Pili received twice as Edna. If Keziah had GH¢ 20.00, find the money the man gave to his children.

b) Write down all the subsets of the set $Y = \{a, b, c\}$.

c) Write $\frac{15m^2 + 7m^2 - 4m^2}{9m^3 - 3m^3}$ in its simplified form and evaluate given that $m = 3$.

d) Miss Nesty bought 96 pairs of sandals to sell. She sold $\frac{5}{8}$ of the sandals in the first week. Find the number of sandals left to be sold.

4. a) A certain number was divided by 3; 3 was added to the result. The final answer is 8. What is the number?

b) Solve for x; $\frac{1}{3}x + 1\frac{2}{3} = \frac{-3}{4}x - \frac{1}{2}$

c) Arrange $\frac{4}{5}$, 1.88 and 81% in ascending order of magnitude.

d) Precious bought 876 litres of palm oil. She sold 54.28 litres of palm oil each hour for the first 7 hours. Find:

- i. The number of litres of palm oil sold in the first 7 hours, correct to 1 decimal place.
- ii. The number of litres of palm oil left, correct to 2 decimal places.

5. a) The table has a rule $y = a - 5x$

x	-3	-2	-1	0	1	2	3
y	30				10		

- i. Find the value of a
- ii. Copy and complete the table
- iii. Using a scale of 2cm to 1 unit on the x-axis and 2cm to 5 units on the y-axis, draw 2 perpendicular axes OX and OY.
- iv. On the same graph sheet, mark the x-axis from -4 to 4 and y-axis from -10 to 35.

b) Plot on the same graph sheet the ordered pair (x,y) from the mapping and join with a straight edge.

c) Use your graph to find

- i. The slope of the line
- ii. The x and y intercepts
- iii. The value of y when $x = 1.5$

6. a) The population of ants is given by 10^{2x+1} where x is time in weeks. After how many weeks will the population of ants in a given colony be 1,000,000?
- b) The number of cashew mango fruits obtained from a farm is given by 2×4^{2x} , where x is in years. Find the number of years it will take to harvest 2^{19} mango fruits.
- c) Find the value of m in the equation $2^6 \div 8 \times 2^m = 32$.
- d) Aseda had three GH¢50.00, seven GH¢20.00, and five GH¢10.00 notes in his pocket. If he bought a bicycle for GH¢150.00 and two mobile phones at GH¢80.00 each, how many GH¢20.00 and GH¢ 10.00 notes did he have left?

SECTION A
(OBJECTIVE TEST)

1. A pencil and an eraser cost GH¢ 3.50. the pencil cost GH¢ 1.00. What is the cost of an eraser?
 A. GH¢ 1.50 C. GH¢ 2.00
 B. GH¢ 0.50 D. GH¢ 0.0
2. Find the sum of all even numbers between 70 and 80.
 A. 450 C. 296
 B. 300 D. 280
3. Find the value of 2 in 8, 020, 845.
 A. 2845 C. 20000
 B. 2,000 D. 2
4. If $3^{x+1} = 81$, find the value of x.
 A. 3 C. -5
 B. 5 D. -3
5. Write two hundred thousand and two in figures.
 A. 20,002 C. 2002
 B. 200,002 D. 200,020
6. Find the difference between 200 and 19.7.
 A. 181.3 C. 182.3
 B. 180.3 D. 183.3
7. Evaluate $\frac{37}{100} \times \frac{7}{10}$
 A. 0.259 C. 259.0

- B. 2.590 D. 25.90
8. Half of the students in a class are girls, if there are 42 students in the class, how many are girls?
A. 21 C. 23
B. 43 D. 24
9. Change 0.14 to common fraction.
A. $\frac{7}{50}$ C. $\frac{8}{25}$
B. $\frac{6}{25}$ D. $\frac{1}{2}$
10. The cost of 12 note books is GH¢ 54.84. Find the cost of one note book.
A. GH¢ 5.57 C. 4.57
B. GH¢ 4.67 D. 3.57
11. Find the equation of a line with slope 2 and y-intercept -5.
A. $y = 2x - 5$ C $y = 2x + 5$
B. $y = 5x + 2$ D. $y = 5x - 2$
12. Three business partners, Akosua, Ransford and Sandra were paid GH¢ 23,451,702, GH¢ 23, 351,702 and GH¢ 23,551,702 respectively for a road construction project. Determine how much more Sandra had than Akosua
A. GH¢ 10,000 C. GH¢ 1,000,000
B. GH¢ 100,000 D. GH¢ 1000
13. Evaluate $53 - (-7) + (-15)$
A. 31 C. 61
B. 45 D. 75
14. Express $\frac{5}{16}$ as a decimal fraction.
A. 0.3333 C. 0.3125
B. 0.2667 D. 0.2500
15. Write GH¢ 35,632.00 to the nearest thousand cedis
A. GH¢ 36,000.00 C. GH¢ 35,600.00
B. GH¢ 35,000.00 D. GH¢ 36,032.00
16. Express 0.0043216 in standard form
A. 4.3216×10^{-4} C. 4.3216×10^1
B. 4.3216×10^{-3} D. 4.3216×10^3
17. Simplify $2^2 \times 3^2 \times 2^3 \times 3^4$
A. $2^2 \times 3^6$ C. $2^5 \times 3^6$
B. $2^4 \times 3^7$ D. $2^6 \times 3^8$

18. Scott is 3 years younger than her sister. If the sum of their ages is 17 years, find Scott's age.

- A. 7 years
- B. 9 years
- C. 8 years
- D. 10 years

19. If the gradient of a straight line is zero, then the line

- A. is directly proportional
- B. is along the x-axis
- C. is inversely proportional
- D. is along the y-axis

20. A bag of rice weighs 2kg. If the empty bag weighs 150g, find the weight of the rice.

($1kg = 10^3g$)

- A. 0.175kg
- B. 1.750kg
- C. 0.185kg
- D. 1.850kg

21. Subtract 9268 from 27,403 and round the answer to the nearest thousand.

- A. 18,135
- B. 18,000
- C. -18,000
- D. -18,135

Study the pattern below carefully to answer question 22 – 24.

X	1	2	3	4	5	6
↓	↓	↓	↓	↓	↓	↓
Y	1	4	25	36		

22. What is the rule of the mapping?

- A. $y = 2x$
- B. $y = x^2$
- C. $y = x + 1$
- D. $y = 2x^2$

23. Find the value of m.

- A. 8
- B. 5
- C. 16
- D. 32

24. The measurement taken by a gardener of a tree is 624.93m high. What is the value of the digit 9?

- A. 9 hundred
- B. 9 tens
- C. 9 units
- D. 9 tenth

25. Which of the following has more than two factors?

- A. 3
- B. 2
- C. 5
- D. 9

26. Correct 0.00855 to four decimal places.

- A. 0.00850
- B. 0.0086
- C. 0.00805
- D. 0.00086

27. David's father asked him to count the number of candles in 6 packs of candle which contains 8 sticks each. How many candle sticks are there in total?

- A. 48 C. 26
B. 16 D. 38

28. Given that $A = \{a, e, i, o, u\}$ and $B = \{r, s, t\}$, how many elements are in $A \cap B$?

- A. 8 C. 2
B. 0 D. 3

29. Simplify $\left(\frac{2}{3} - \frac{1}{2}\right) \div \frac{1}{6}$

- A. $\frac{1}{36}$ C. 1
B. $\frac{1}{12}$ D. 6

30. In office, $\frac{2}{3}$ of the telephone bill is paid by Tom, $\frac{1}{5}$ by Azuma and the remaining by Tina. What fraction is paid by Tina?

- A. $\frac{2}{15}$ C. $\frac{1}{3}$
B. $\frac{3}{4}$ D. $\frac{7}{15}$

31. Evaluate giving your answer in standard form, $(9.3 \times 10^5) \times (2 \times 10^3)$

- A. 18.6×10^9 C. 1.86×10^9
B. 1.86×10^8 D. 1.86×10^{-8}

32. The distance between two towns is 12875km. Express this distance in standard form.

- A. 1.2875×10^3 C. 12.875×10^{-3}
B. 1.2875×10^4 D. 1.2875×10^{-4}

33. Write 39.9748km correct to three significant figures.

- A. 39.9km B. 39.974km C. 40.0km D. 39.975km 34.

34. Evaluate $\frac{0.54 \times 0.7}{9}$.

- A. 0.0042 C. 0.042
B. 0.42 D. 4.2

35. An equation of a straight line is $12x + 3y - 6 = 0$. What is the gradient of the line?

- A. -12 C. 4
B. -4 D. 12

36. The slope of the line through the points X (4, y) and Y (7,3) is 2. Find the value of y.

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

37. Express 5 days in minutes, leave the answer in standard form.

- A. 1.2×10^2 C. 3.00×10^3
B. 7.2×10^3 D. 6.0×10^2

38. Find the number of elements if a set has 32 subsets.

- A. 32 C. 5
B. 6 D. 16

39. Determine the gradient of a line which passes through the points A (2,1) and B (1,6).

- A. -5 C. -3
B. 5 D. 3

40. Find the equation of a straight line with slope 1 and y-intercept of 2

- A. $y = 2x + 1$ C. $y = x + 2$
B. $2y = x + 1$ D. $y = 2x + 2$