TIME: 2 HOURS  MARKS: 50

NO READING TIME

INSTRUCTIONS TO CANDIDATES

1. Pull out the Answer Sheet from the question paper.

2. Write your name, examination number and school/centre on the Answer Sheet.

This paper consists of Sections A and B only. There are thirty (30) questions in this paper.

Section A: Answer all questions. Write the letter of the answer by marking a cross (X) on the Answer Sheet provided.

Question 1 – 10: 1 mark each.

Section B: Answer all questions. Write the answers in the spaces provided on the Answer Sheet.

Question 11 – 30: 2 marks each.

Note: 1 No paper for rough work is to be provided. Any working should be done on the question paper in the spaces provided.

2 Cell phones and calculators are not allowed in the examination room.

3 Only the Answer Sheet should be handed in.

This question paper consists of 8 printed pages.
EXAMINATIONS COUNCIL OF ZAMBIA
ANSWER SHEET FOR GRADE 9 MATHEMATICS PAPER 1 – 2011

NAME: ____________________________________________

EXAMINATION NUMBER: ______________________________

SCHOOL/CENTRE: ___________________________________

TOTAL MARKS: ________________________________

Section A

For each question, mark your choice with a cross (X)

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Section B

Write your answers in the spaces provided. Working must NOT be done on this paper.

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SECTION A [10 MARKS]

1. Evaluate $-2 - (-10)$.
   A. $-20$
   B. $-12$
   C. $-8$
   D. $8$
   E. $12$

2. State the number of lines of symmetry of the shape below.

   A. $1$
   B. $2$
   C. $3$
   D. $4$
   E. $6$

3. From the word MATHEMATICAL, the modal letter is ...
   A. M.
   B. A.
   C. T.
   D. L.
   E. H.

4. In the diagram below, BDE is a straight line, angle BCD = 70° and angle CDE = 150°.
   Calculate angle CBD.
   A. $110°$
   B. $100°$
   C. $80°$
   D. $70°$
   E. $55°$
5 In the expression $2xy^3 + 5x^2 + 4y$, $x$ and $y$ are variables.

State the coefficient of $y$.

A 1
B 2
C 3
D 4
E 5

6 Given that $E = \{a, b, c, d, e, f, g, h, i, j, k\}$ and $A = \{b, c, d, e, f, g, h\}$, find $n(A')$.

A 11
B 7
C 4
D $\{b, c, d, e, f, g, h\}$
E $\{a, i, j, k\}$

7 State the number of significant figures in 70.001.

A 1
B 2
C 3
D 4
E 5

8 Write 35% as a fraction in its lowest terms.

A $\frac{7}{20}$
B $\frac{5}{20}$
C $\frac{7}{50}$
D $\frac{35}{50}$
E $\frac{35}{100}$
9. How many faces does a triangular pyramid have?
   A. 2  
   B. 3  
   C. 4  
   D. 5  
   E. 6

10. State the order of rotational symmetry for the figure below.

A. 8  
B. 4  
C. 2  
D. 1  
E. 0
SECTION B  [40 MARKS]

11 If $G = \{a, b, c, d, e\}$, how many subsets has set $G$?

12 Simplify $\frac{6k^2 - 24k}{6k}$.

13 The average height of Nosiku, Naza, Twaambo and Natasha is 1.4m. If Natasha’s height is 1.25m, what is the total height of the other three children?

14 (a) Mwansa got 16 marks out of 25 in a Mathematics test. What percentage did she get in this test?
(b) Simplify $5x + 2y - x - 2y$.

15 In the diagram below, ABC is a straight line, BD is parallel to CE, angle ABD $= 75^\circ$ and angle BDC $= 45^\circ$.

Find angle
(i) DCE,
(ii) BCD.

16 Express $\frac{x+3}{3} - \frac{x}{5}$ as a single fraction in its simplest form.

17 Towela’s average step is 35cm long and her mother’s is 50cm. Towela takes 920 steps for a certain distance. How many steps would her mother take for the same distance?

18 The masses of 4 babies born on the same day were 3.1kg, 2.6kg, 3.3kg and 2.8kg. Calculate the average mass of the babies, giving your answer correct to the nearest kilogram.

19 If the operation $y \ast x$ means $y^2 - x$, find the value of $-3 \ast 2$. 
20 A newspaper vendor receives a commission of K150 for each newspaper he sells. Find the commission he received after selling 940 newspapers.

21 The diagram below shows a rectangular swimming pool partly surrounded by a lawn 1m wide. The shaded part represents the lawn. The length of the swimming pool is 11m and the breadth is 7m.

Find the perimeter of the lawn.

22 Solve the inequation $15 < -4x + 3$.

23 (a) The diagram below shows two similar triangles. Angle $ACB = angle BED = 60^\circ$ and angle $CAB = angle BDE = 90^\circ$.

State the side that corresponds to $BD$.

(b) Evaluate $\frac{2}{5} + \frac{1}{4}$.

24 Solve the equation $3(x - 5) = 45$.

25 (a) During a football match between Zambia and Cameroon, 78 620 people attended the match. Express the number of people in standard form.

(b) A boxing match started at 20 35 hours and ended after 30 minutes. At what time did the match end?
26 The diagram below shows a ladder 15m long leaning against an upright wall of height w metres. The foot of the ladder is 9m away from the wall.

Find the height of the wall.

27 Mrs Chikho bought the following items from Shoprite:
10kg of beef at K12 000 per kg,
15kg of sugar at K6 000 per kg,
3 tins of water paint at K20 000 per tin.

(i) Find the total bill for Mrs Chikho.

(ii) If she was given 5% cash discount, how much did she pay for the items?

28 Convert 20m/s to km/h.

29 Mubita invested K1 480 000 for 5 years and received an interest of K296 000. What was the rate of interest?

30 Timothy has twice as many sweets as Monde. If Timothy has 36 sweets, find the ratio of Timothy’s sweets to Monde’s sweets in its lowest terms.