

SECTION A**QUESTION 1**

For each of the following questions choose the correct answer. Make a cross (X) over the letter (i.e. **A, B, C, D**) which corresponds to your answer on **the answer sheet provided**.

- 1.1 Which statement is true?
- A. All integers are natural numbers.
 - B. All real numbers are rational numbers.
 - C. All integers are real numbers.
 - D. All non-real numbers are irrational numbers.
- 1.2 Calculate $\sqrt{144+25}$
- A. 17
 - B. 13
 - C. 7
 - D. -7
- 1.3 The complement of 63° is:
- A. 27°
 - B. 117°
 - C. 297°
 - D. 7°
- 1.4 $x + 2x =$
- A. $3x^2$
 - B. $2x^2$
 - C. $3x$
 - D. x^3
- 1.5 $3(a + b) =$
- A. $3ab$
 - B. $3a + b$
 - C. $3a + 3b$
 - D. $3 + a + b$

- 1.6 What is the value of the expression $3x - 4$ when $x = 5$?
- A. 9
 - B. 11
 - C. 3
 - D. -5
- 1.7 Replace the $*$ with the correct sign: $-15 * -3$
- A. $<$
 - B. $=$
 - C. $>$
 - D. \geq
- 1.8 0,36 as a common fraction is:
- A. $\frac{1}{4}$
 - B. $\frac{3}{6}$
 - C. 36
 - D. $\frac{9}{25}$
- 1.9 $\frac{5}{8}$ as a percentage is:
- A. 58%
 - B. 37,5 %
 - C. 62,5%
 - D. Not possible
- 1.10 $\frac{0 \times 1}{1 \times 1} =$
- A. 1
 - B. 0
 - C. Undefined
 - D. $\frac{1}{2}$

[10]

QUESTION 2

Complete the following table by placing a ✓ in the appropriate column. **Answer this question on your answer sheet.**

Number		<i>Natural</i>	<i>Integer</i>	<i>Rational</i>	<i>Irrational</i>	<i>Real</i>
2.1	3					
2.2	$\sqrt{25}$					
2.3	$\frac{22}{7}$					
2.4	3, 12					
2.5	2,315...					

[5]

QUESTION 3

3.1 From the list of numbers below, choose a number that:

8 13 14 18 24 49 77

3.1.1 is a multiple of 2 and 3 (1)

3.1.2 is a perfect square (1)

3.1.3 is a prime number (1)

3.1.4 is a factor of 24 (1)

3.1.5 is the square root of 169 (1)

3.1.6 is the Highest Common Factor of 48 and 72 (1)

3.2 Express 360 as a product of its prime factors. (3)

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QUESTION 4

Evaluate each of the following. Show all your working out:

4.1 $2 - 4(2 - 7)$ (2)

4.2 $(4^2 \times 2 - \sqrt{64}) \div 3$ (3) 4

4.3 $\frac{1\frac{1}{2} + 3\frac{3}{4}}{\frac{2}{3} - \frac{1}{4}}$ (6)

[11]

QUESTION 5

Examine the following algebraic expression:

$$7y^2 + \frac{y^5}{3} - 6y + 2$$

5.1 How many terms are there in the expression? (1)

5.2 Write down the coefficient of y^5 . (1)

5.3 Write down the constant term. (1)

5.4 Rearrange the expression in descending powers of y . (2)

5.5 If $y = -1$ calculate the value of the expression. (3)

[8]

QUESTION 6

Simplify:

6.1 $a + a + a$ (1)

6.2 $a \times a \times a$ (1)

6.3 $-5a - 3a + 2a$ (1)

6.4 $-3a^2 - (-5a^2)$ (2) 5

6.5 $-4x \times 2x^2$ (2)

6.6 $3a^3b^2 \times (-5ab^4)$ (3)

6.7 $(-2a^3b^4)^2$ (3)

6.8 $3x^2y - 12y^2x + 7xy^2$ (2)

6.9 $-3(x - 2) - 4(2x + 3)$ (4)

6.10 $\frac{20x^6y}{5x^2y^3}$ (3)

6.11 $\frac{x^2+4x^2}{10x^2}$ (2)

6.12 $\sqrt{64a^8e^{10}}$ (3)

6.13 Use columns to add $2a - c + b$ to $3a + 3b + 3c$ (3)

[30]

QUESTION 7

7.1 Write algebraic expressions for the following:

7.1.1 A number 3 more than x . (1)

7.1.2 John's age 5 years ago if he is now p years old. (1)

7.1.3 There are n number of fish in a bowl. How many fish are there in m bowls? (1)

7.1.4 Five times the square of x . (1)

7.1.5 A ticket to a movie costs x rand and a Coke costs y rand. What will it cost to treat yourself and three friends to a movie and a Coke? (2)

7.2 Solve for x :

7.2.1 $x - 6 = -20$ (1)

7.2.2 $\frac{x}{-6} = 12$ (1)

7.2.3 $2x + 5 = 5x - 7$ (3)

7.2.4 $4(x - 2) - 2(x + 1) = 4$ (4)

[15]