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LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

VHEMBE WEST DISTRICT

Liberty through knowledge

GRADE 9

MATHEMATICS

2023 TERM 1

COMMON TEST

MARKS: 50

DURATION: $1\frac{1}{2}$ HOURS

This Question paper consists of 6 pages including the cover page.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of 5 questions.
2. Answer all questions.
3. Number your answers exactly as the questions are numbered in the question paper.
4. Read through the questions carefully and make sure that you allocate enough time for each question.
5. You may use an approved scientific calculator (non-programmable and non-graphical).
6. Clearly show ALL the calculations, diagrams and graphs etc. you have used in determining your answers.
7. If necessary, round off to TWO decimal places unless otherwise stated.
8. Answers alone will not necessarily earn full marks.
9. It is in your best interest to write legibly and present your work neatly.

QUESTION 1

Choose the **LETTER** with the correct answer.

1.1 Which one of the following numbers is a natural number?

A 0

B $\sqrt{3}$

C 5

D $\frac{7}{8}$ (1)

1.2 Calculate: $-3^2 + (3)^2$

A 18

B -9

C 12

D 0 (1)

1.3 If Simplify: $(-x^2y^5)^5$

A $-x^2y^{25}$

B $-x^{10}y^{25}$

C $-x^{10}y^5$

D $x^{10}y^{25}$ (1)

1.4 The constant ratio in the sequence 2; 4; 8; 16 ... is:

A 2

B $\frac{1}{2}$

C -2

D 4 (1)

1.5 Calculate : $5^4 \div 5^2$

A 25

B - 25

C $\frac{1}{25}$

D $-\frac{1}{25}$ (1)

[5]

QUESTION 2

2.1 Find the HCF of 36 *and* 54 (3)

2.2 Write the ratio of 24 *and* 36 in the simplest form (2)

2.3 A car travel at 80km/h . How long does it take to travel 320km (3)

2.4 Phindulo buys a car costing $R100000$ on hire purchase, by means of monthly payment, over a period of 36 *months*. The simple interest rate is 20% *p. a.*

Calculate what he will actual pay for a car? (3)

[11]

QUESTION 3

3.1 Simplify the following:

(a) 2^{-4} (2)

(b) $\left(\frac{a^5}{b^6}\right)^3$ (1)

(c) $5m^2np \times mn^2p^2 - 3m^3n^3p^3 \times (4mnp)^0$ (3)

(d) $\frac{32abc}{64ac} \times \frac{8bc}{4b^2}$ (3)

$$(e) \frac{-3a^3 \times (-4b^3) - (-27a^3b^3)}{-3a^2b} \quad (3)$$

$$(f) -2(15m) - 3(-12m) \quad (2)$$

3.2 Mercury has a melting point of -39°C and the freezing point of methanol is

-98°C . How much warmer is the melting point of mercury than the freezing

point of methanol (1)

[15]

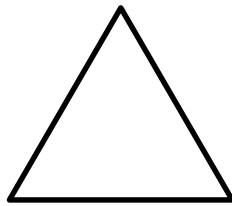
QUESTION 4

$$4.1. \quad \frac{12a^5 b^2}{3 a^2 b^2} \quad (3)$$

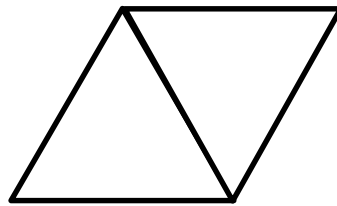
$$4.2. \quad (3x^3 \times 2x^3)^2 + (3x^6 + 2x^6)^2 \quad (3)$$

$$4.3 \quad x^3 \times (x^2)^3 \quad (2)$$

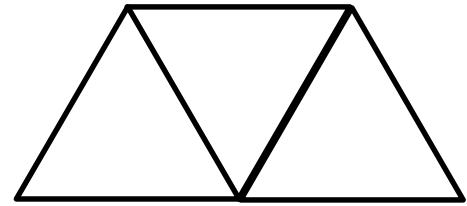
[8]

QUESTION 5

Pattern 1



Pattern 2



Pattern 3

5.1 Copy and complete the table by writing down a pattern representing the number of sticks that makes each pattern

Pattern	1	2	3	4	5
Number of sticks	_____	_____	7	9	11

(2)

5.2 Determine the general rule in the form of $T_n =$

(2)

5.3 Describe the pattern in your own words.

(2)

5.4 Without drawing the pattern, determine the number of sticks to build the 17th pattern

(2)

5.5 Which term of the pattern or sequence is equal to 201

(3)

[11]**TOTAL: [50]**