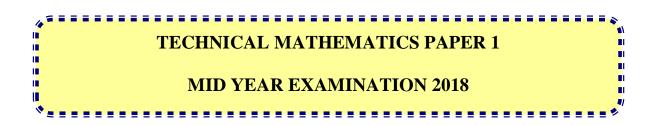


Education and Sport Development

Department of Education and Sport Development Departement van Onderwys en Sport Ontwikkeling Lefapha la Thuto le Tihabololo ya Metshameko

NORTH WEST PROVINCE

GRADE 10



MARKS: 75

TIME: 1 hour 30 minutes

This question paper consists of 5 pages

Grade

INSTRUCTIONS AND INFORMATION

- 1. This question paper consists of 5 questions, answer ALL the questions.
- 2. Clearly show ALL calculations
- 3. An approved scientific calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
- 4. If necessary, answers should be rounded off to TWO decimal places, unless stated otherwise.
- 5. Number the answers correctly according to the numbering system used in this question paper.
- 6. It is in your own interest to write legibly and to present the work neatly.

3 Grade 10

QUESTION 1

Given the following numbers: $\frac{3}{7}$; $\sqrt{17}$; $\frac{0}{4}$; 0, 2; $-\sqrt{16}$; 0,000584; $\sqrt{-16}$

1.1	Write down from the list above:			
	1.1.1 one irrational number	(1)		
	1.1.2 two integers	(2)		
	1.1.3 one imaginary number	(1)		
1.2	2 Use a calculator to write down the value of $\frac{3}{7}$ rounded off to three decima			
	places	(2)		
1.3	Write 0,000584 in scientific notation	(2)		
1.4	Determine between which two consecutive integers does $\sqrt{17}$ lie?	(2) [10]		

QUESTION 2

2.1	Convert the 58 from decimal to binary		(2)
2.2	Convert the binary number 10101 to decimal		(2)
2.3	Perform the following operation:		
	$\frac{1011}{\times 11}$		(2)
2.4	Simplify:		
	2.4.1 $\sqrt{-121}$	(2)	
	2.4.2 i^{39}		(2) [10]

QUESTION 3

3.1	Simpli	Simplify:			
	3.1.1	2(2a-4b) - (3a-2b)	(3)		
	3.1.2	(3x+2)(x-6)	(3)		
	3.1.3	$(x-5)(x^2+5x+25)$	(3)		

www.tec-it.com

[18]

Grade 10

- 3.2 Factorise fully:
 - 3.2.1 $8x^2 6x$ (2)
 - $3.2.2 \quad 3x 6xy 2y + 1$ (3)
 - 3.2.3 $x^2 9x + 20$ (2)
 - 3.2.4 $a^2 16b^2$ (2)

QUESTION 4

- 4.1 Simplify:
 - 4.1.1 $12b^4c^2 \div 6b^3 5bc^2$ (3)

$$4.1.2 \quad \frac{25^{x+2}}{5^{2x-1}} \tag{4}$$

- Determine the HCF of: $9ab^2$ and $12a^2b^3$ 4.2 (2)
- 4.3 Simplify:

4.3.1
$$\frac{(x-3)}{3} - \frac{(x+2)}{4}$$
 (5)

4.3.2
$$\frac{x^2 - 5x - 6}{x^2 - 1} \times \frac{2x - 2}{x^2 - 6x}$$
 (5)

QUESTION 5

5.1 Solve for *x*:

- 5.1.1 $2^x = 32$ (2)
- 5.1.2 2(2x-1) = x+1(4)
- 5.1.3 $x^2 5x = 14$ (4)

Grade 10

5.2	$F = \frac{9}{5}$	C+32 is a formula that converts temperature in degrees Celsius to degrees	
	Fahrenheit.		
	5.2.1	Make C the subject of the formula	(3)
	5.2.2	If the temperature in Cape Town is 50 degree Fahrenheit, convert this to	
		degree Celsius.	(2)

Convert 250m³ to km³ 5.3

[18]

(3)

GRAND TOTAL: 75 marks