

**Part 1: Multiple Choice. 7 marks**

\_\_\_\_ / 34 = \_\_\_\_ %

Place the letter of the correct response in the space provided on the right.

1. Write  $(-8)^6 \div (-8)^3$  as a single power.

1. \_\_\_\_

(A)  $(-8)^2$

(B)  $(-8)^3$

(C)  $(-8)^9$

(D)  $(-8)^{18}$

2. Write  $(7^3)^2 \times (7)^4$  as a single power.

2. \_\_\_\_

(A)  $7^2$

(B)  $7^9$

(C)  $7^{10}$

(D)  $7^{13}$

3. Evaluate:  $3^3 - 4^2$ 

3. \_\_\_\_

(A) -11

(B) 1

(C) 7

(D) 11

4. Evaluate:  $-4^2 + 7^0$ 

4. \_\_\_\_

(A) -15

(B) -9

(C) 17

(D) 23

5. Which has an answer of 16?

5. \_\_\_\_

(A)  $4^4$

(B)  $-4^2$

(C)  $(-4)^2$

(D)  $-(-4)^2$

6. Evaluate:  $\left(\frac{2}{3}\right)^3$ 

6. \_\_\_\_

(A)  $\frac{2}{27}$

(B)  $\frac{6}{9}$

(C)  $\frac{8}{27}$

(D)  $\frac{8}{9}$

7. Which statement is true?

7. \_\_\_\_

(A)  $(4^6)^3 = 4^9$

(B)  $4^6 \times 4^3 = 7^{18}$

(C)  $4^0 = 0$

(D)  $\frac{4^6}{4^3} = 4^3$

**Part 2: Long Answer Questions. 27 marks****Answer ALL questions in the space provided. Show ALL working to receive FULL credit.**

1. Complete the table. \_\_\_\_\_ / 4

Power	Base	Exponent	Repeated Multiplication	Standard Form
			$-(4 \times 4 \times 4 \times 4 \times 4 \times 4)$	
$\left(-\frac{5}{3}\right)^4$				

2. Evaluate
- $(2^3)^2$
- and
- $(2^3)(2^2)$
- and explain why they are different. \_\_\_\_\_ / 4

3. Evaluate each expression. Show your work. \_\_\_\_\_ / 6

a.  $\left[(4-10)^3 \times 3^5\right]^0 + (6-2^2)$       b.  $(4-16 \div 2^3)^4 - (6-3)^2$

4. Write as a single power and then evaluate. \_\_\_\_\_ / 6

a.  $(5^2 \times 5^8) \div (5^3)^2$

b.  $\frac{(-3)^7}{(-3)^2 \times (-3)^3}$

5. Using laws of exponents, simplify and then evaluate: \_\_\_\_\_ / 4

$$(3^3 \times 3)^2 + [(-2)^5 \div (-2)^2]^3$$

6. Identify and then correct any errors in the student's work below. Explain how you think the errors occurred. \_\_\_\_\_ / 3

$$(3^3 + 3^2)^2$$

$$= (3^5)^2$$

$$= 3^{10}$$

$$= 59049$$