

Name: \_\_\_\_\_

Key

40

Selected Response: Questions 1 - 5

[10 marks]

1. Which power is the greatest?

- A.  $2^7$     B.  $7^2$     **C.  $3^5$**     D.  $5^3$

2. Identify the power that represents  $(4)(4)(4)(4)(4)$ .

- A.  $4^5$**     B.  $5^4$     C.  $(4)(5)$     D. 256

3. Identify the selection that is equivalent to  $6^3$ ?

- A.  $(3)(3)(3)(3)(3)(3)$     **B. 216**    C.  $(6)(3)$     D.  $6 + 6 + 6$

4. Evaluate  $-2^6$ .

- A. 12    **B. -64**    C. 64    D. -12

5. In the expression  $(-3)^7$ , what is  $(-3)^7$  called?

- A. Exponent    B. Base    **C. Power**    D. Product

6. Use powers of 10 to write the number: 45062003

$$4 \times 10^7 + 5 \times 10^6 + 6 \times 10^4 + 2 \times 10^3 + 3 \times 10^0$$

[2 marks]

7. Write  $(7 \times 10^1) + (3 \times 10^5) + (9 \times 10^4) + (1 \times 10^0)$  in standard form.

$$340071$$

[2 marks]

8. Evaluate  $3^2 - (4)^1(24)^0$ .

$$9 - 4(1) = 5$$

[2 marks]

9. Write  $10^{11}$  in standard form.

$$100000000000$$

[2 marks]

10. Solve  $(2^2 \cdot 3^2 - 4^2)^2$ 

$$\begin{aligned} & (4 \cdot 9 - 16)^2 \\ & (36 - 16)^2 \\ & 20^2 \\ & 400 \end{aligned}$$

[2 marks]

**SHOW WORKINGS FOR FULL MARKS**

Evaluate these expressions.

11.  $(5)(3) - 7[(-3) - 2]^3$  [3 marks]

$$15 - 7[-5]^3$$

$$15 - 7(-125)$$

$$15 + 1000$$

$$1015$$

12.  $(6)(3)^2 - (2^0 + 3^3) \div 7$  [3 marks]

$$6(9) - (1 + 27) \div 7$$

$$54 - 28 \div 7$$

$$54 - 4$$

$$50$$

13.  $[(5-3)^2 \times 3]^2 - 8 \div 2$  [3 marks]

$$[(2)^2 \times 3]^2 - 8 \div 2$$

$$[4 \times 3]^2 - 8 \div 2$$

$$12^2 - 8 \div 2$$

$$144 - 4$$

$$140$$

14. A population of giraffes in Africa is near extinction and only 8 giraffes survive. The wildlife fund has developed a great program and they expect the population of giraffes to triple each year.

A) How many giraffes will be present in 4 years time? Complete the table. [2 marks]

Year	0	1	2	3	4
Number of giraffes	8	24	72	216	648

B) Write an expression that allows us to determine how many giraffes will be in the population in  $n$  years.

# of giraffes = [1 marks]

15. A fish farming organization needs to determine the total population of their stocks. They count 127,365 cod fish, 52,649 salmon, and 4,316 trout.

A) How many fish does the company have in total?

[1 mark]

$$127,365 + 52,649 + 4,316$$

$$= 184,330$$

B) Express the answer using powers of 10

[1 mark]

16. A student performed this calculation on a test and did not receive full marks. Identify, and explain the mistake and rework the question so that it is correct.

[3 marks]

$$-(24 - 3 \times 4^6)^0 \div (-4)^2$$

$$(-1) \div (-16)$$

$$\frac{1}{16}$$

$$-(24 - 3 \times 4^6)^0 \div (-4)^2$$

$$-1 \div 16$$

$$-\frac{1}{16}$$

17. Solve the equation:  
marks]

$$\frac{4(5^2) \div [2(4 + (+1))^2]}{-3 + 2}, \text{ where } a = 5, b = 1, c = 2, \text{ and } d = 3.$$

[3

$$\frac{4(25) \div (2(5)^2)}{-1}$$

$$\frac{100 \div (2(25))}{-1}$$

$$\frac{100 \div 50}{-1}$$

$$\frac{2}{-1} = -2$$