Midterm Review – Unit 2

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. Write the base of $-(-5)^3$.
   A. -5
   B. 5
   C. -5×3
   D. 3

2. Evaluate: 6^5
   A. 30
   B. 7776
   C. 15 625
   D. 11

3. Evaluate: -4^4
   A. -256
   B. -16
   C. 16
   D. 256

4. Which power is positive?
   i) $(6)^5$
   ii) $(-6)^5$
   iii) $-(6)^5$
   iv) $-(-6)^5$
   A. i and iv
   B. iii and iv
   C. i, ii, and iv
   D. i and ii

5. Evaluate: 10^7
   A. 100 000 000
   B. 10 000 000
   C. 1 000 000
   D. 70

6. Write 1 000 000 as a power of 10.
   A. $(1 \times 10^6) + (1 \times 10^5) + (1 \times 10^4) + (1 \times 10^2) + (1 \times 10^1) + (1 \times 10^0)$
   B. 10^5
   C. $(10 \times 10^5) + (10 \times 10^4) + (10 \times 10^2) + (10 \times 10^1) + (10 \times 10^0)$
   D. 10^6

7. Write $(3 \times 10^4) + (5 \times 10^3) + (7 \times 10^2) + (4 \times 10^1) + (6 \times 10^0)$ in standard form.
   A. 35 746 B. 3574 C. 35 741 D. 35 740

8. Write $(5 \times 10^4) + (8 \times 10^1) + (9 \times 10^2) + (6 \times 10^0)$ in standard form.
   A. 50 980
   B. 50 986
   C. 50 981
   D. 5986

9. Evaluate: $(3+4)^2 - (2-4)^3$
   A. –31
   B. 57
   C. 20
   D. 41

10. Which is the correct value of $3^2 + 4 \times 6 - 4$?
    i) 26
    ii) 17
    iii) 29
    iv) 74
    A. i
    B. iii
    C. iv
    D. ii

11. Which expression has a value of 0?
    i) $-(-7)^0 + 2 \times (-5)^0 - (-4)^0$
    ii) $(7 \times 5)^0 - (5-4)^2 + (8-5)^0$
    iii) $5 - (4 \div 4)^2 - (-8)^0$
    iv) $(4 \times 4 \div 8) - (5^2 - 7^2)^0 - (-7)^0$
    A. ii and iii
    B. i, iii, and iv
    C. i, ii, and iv
    D. i and iv

12. Evaluate: $(-8)^4 \div (-8)^4$
    A. -8
    B. 1
    C. -1
    D. 0

13. Evaluate: $10^2 \times 10^5 + 10^5$
    A. 10 100 000
    B. 1 000 000 000 000
    C. 120
    D. 10 000 100 000

14. Write $\left[(-7) \times 3\right]^4$ as a product of powers.
    A. $4(-7) \times 3$
    B. $(-4)^4$
    C. $(-7)^4 + 3^4$
    D. $(-7)^4 \times 3^4$

15. Which expressions have positive values?
    i) $\left[(-5)^2\right]^7$
    ii) $\left[-(-5)^2\right]^7$
    iii) $-\left(5^2\right)^7$
    iv) $-\left[-(-5)^2\right]^7$
    A. ii and iv
    B. ii and iii
    C. i and ii
    D. i and iv

Short Answer

16. Write the product of ten thousand times one thousand as a power of 10.

17. Which number, $(4 \times 10^6) + (4 \times 10^5) + (4 \times 10^1)$ or 4 400 400, is greater?

18. Write the product of $7^6 \times 7^7$ as a single power.

19. Evaluate: $3^3 \times 3^4 - 3^5 \times 3$

20. Write $(8 \div 9)^5$ as a quotient of powers.

Problem

21. Evaluate: $2^4 \times 3^3 \times 5^2$
    Show your steps.

22. Identify, then correct, any errors in the work shown.

$$\frac{5^2 + 3 \times 4^2 - 3^2}{3^2 - (5 \times 4^0)}$$
$$= \frac{25 + 3 \times 16 - 9}{9 - 1}$$
$$= \frac{28 \times 7}{8}$$
$$= \frac{196}{8}$$
$$= 24.5$$