



Note:

- (1) Read the questions properly
- (2) Write all steps
- (3) Marks will be awarded to questions with correct answers and appropriate steps.

Name:

Date:

Areas of Improvement:

Maximum Marks	26
Marks Obtained	
%	

A student must solve incorrect and unattended questions.

Parent Signature	Parent Signature



Section A

[1 x 9 = 9]

1. Out of the following, the number which is not equal to $\frac{-8}{27}$ is

(a) $-\left(\frac{2}{3}\right)^3$ (b) $\left(\frac{-2}{3}\right)^3$ (c) $-\left(\frac{-2}{3}\right)^3$ (d) $\left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right)$

2. $(-7)^5 \times (-7)^3$ is equal to

(a) $(-7)^8$ (b) $(-7)^8$ (c) $(-7)^{15}$ (d) $(-7)^2$

3. For any two non-zero integers x and y, $x^3 \div y^3$ is equal to

(a) $\left(\frac{x}{y}\right)^0$ (b) $\left(\frac{x}{y}\right)^3$ (c) $\frac{x^6}{y}$ (d) $\frac{x^9}{y}$

4. $(5^7 \div 5^6)^2 = \underline{\hspace{2cm}}$

5. $\frac{a^7 b^3}{a^5 b} = \underline{\hspace{2cm}}$

6. The value of $(5^{30} \times 5^{20}) \div (5^5)^9$ in the exponential form is

(a) 5^{-5} (b) 5^5 (c) 5^{50} (d) 5^{95}

7. The value of $5^{-1} - 6^{-1}$ is

8. If $2^3 + 1^3 = 3^x$, then the value of x is

9. if $\left[-\frac{3}{5}\right]^x = -\frac{27}{125}$, find the value of x

Section B

[2 x 4 = 8]

10. Identify the greater number in each of the following:

(i) 4^3 or 3^4

(ii) 4^3 or 5^4

11. $\left(\frac{6}{13}\right)^{10} \div \left[\left(\frac{6}{13}\right)^5\right]^2 = \left(\frac{6}{13}\right) \square$

12. $(4x^2y^3)^3 \div (3x^2y^3)^3$



13. Simplify and express the Solution in the positive exponent form : $\frac{(2^3)^5 x 5^4}{4^3 x 5^2}$

Section C

[3 x 2 = 6]

[Attend any two questions only]

14. If $m^2 = -2$ and $n = 2$; find the values of: $6m^{-3} + 4n^2$

15. Arrange in ascending order: $2^5, 3^3, 2^3 \times 2, (3^3)^2, 3^5, 4^0, 2^3 \times 3^1$

16. if $\frac{p}{q} = \left(\frac{3}{2}\right)^2 \div \left(\frac{9}{4}\right)^0$ find the value of $p \left(\frac{p}{q}\right)^3$

Section D

[3 x 1 = 3]

17. Express the numbers appearing in the following statements in scientific notation:

(i) The earth has 1,353,000,000 cubic km of water.

(ii) The population of India was about 1,027,000,000 in March, 2001.

(iii) 60,230,000,000,000,000,000 molecules are contained in a drop of water.