Chapter- 4

POWERS

WORKSHEET

Multiple Choice Questions (MCQs)

Question 1: $a^m \times a^n$ is equal to

(a) $(a^2)^{mn}$ (b) a^{m-n}

(c) a^{m+n} (d) a^{mn}

Question 2: $(1° + 2° + 3°)$ is equal to

(a) 0 (b) 1 (c) 3 (d) 6

Question 3:

The value of $\frac{10^{22} + 10^{20}}{10^{20}}$ is

(a) 10 (b) 10^{42} (c) 101 (d) 10^{22}

(a) $\frac{-2}{3}$ (b) $\frac{2}{3}$ (c) $\frac{-4}{9}$ (d) $\frac{4}{9}$

Question 4:

Which of the following is not equal to $\left(\frac{-5}{4}\right)^4$?

(a) $\frac{(-5)^4}{4^4}$ (b) $\frac{5^4}{(-4)^4}$

(c) $-\frac{5^4}{4^4}$ (d) $\left(-\frac{5}{4}\right) \times \left(-\frac{5}{4}\right) \times \left(-\frac{5}{4}\right) \times \left(-\frac{5}{4}\right)$

Fill in the Blanks:

In questions 5 to 8 , fill in the blanks to make the statements meaningful .

Question 5:

$(-2)^{31} \times (-2)^{13} = (-2)^{\_\_}$

Question 6:

$(-3)^{8} \div (-3)^{5} = (-3)^{\_\_}$

Question 7:

$\left(\frac{11}{15}\right)^{4} \times (\_\_\_\_)^{5} = \left(\frac{11}{15}\right)^{9}$

Question 8:

$\left(\frac{-1}{4}\right)^{3} \times \left(\frac{-1}{4}\right)^{\_\_} = \left(\frac{-1}{4}\right)^{11}$

True/ False

In questions 9 to 12, state whether the given statements are True or False.

Question 9: $3^4 > 4^3$

Question 10:

$\left(\frac{-3}{5}\right)^{100} = \frac{-3^{100}}{-5^{100}}$

Question 11: $(10 + 10)^{10} = 10^{10} + 10^{10}$

Question 12: x° x x° =x° + x° is true for all non-zero values of x.

Question 13:

Find m, so that $\left(\frac{2}{9}\right)^3 \times \left(\frac{2}{9}\right)^6 = \left(\frac{2}{9}\right)^{2m-1}$.

Question 14:

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

Question 15:

Find the reciprocal of the rational number $\left(\frac{1}{2}\right)^2 \div \left(\frac{2}{3}\right)^3$.

Question 16: Find the value of

(a) 7^0 (b) $7^7 \div 7^7$

(c) $(-7)^{2\times 7-6-8}$ (d) $(2^0+3^0+4^0)(4^0-3^0-2^0)$

(e) $2\times 3\times 4 \div 2^0 \times 3^0 \times 4^0$ (f) $(8^0-2^0)\times(8^0+2^0)$

Question 17:

Find the value of n, where n is an integer and $2^{n-5} \times 6^{2n-4} = \frac{1}{12^4 \times 2}$.

Question 18: Express the following in usual form.

(a) 8.01×10^7 (b) 1.75×10^{-3}

Question 19: Find the value of

(a) 2^5 (b) (-3^5) (c) $-(-4^4)$

Question 20: Express the following numbers in standard form.

(a) 76,47,000 (b) 8,19,00,000

(c) 5,83,00,00,00,000 (d) 24 billion