INDIAN SCHOOL AL WADI AL KABIR

Class VIII, Mathematics (2022-23)

Worksheet DTQ – EXPONENTS & POWERS

SHORT ANSWER TYPE QUESTIONS- 7 QUESTIONS. (2 Marks each)	
Q1.	Write the following numbers in the usual form: a) 8.37×10^{-9} b) 2.1×10^{6}
Q2.	$(7)^{7} \times (7)^{-2} \times (7)^{5}$
Q3.	$\left(\frac{1}{3}\right)^{-2} + \left(\frac{1}{5}\right)^{-2} + \left(\frac{1}{4}\right)^{-2}$
Q4.	Find the value of 'p' so that $5^{P+1} \times 5^{5} = 5^{12}$
Q5.	Express 2048 as a power 2.
Q6.	Simplify : $(3^{-10} \div 3^{-7}) \times 3^{5}$
Q7.	Write the following numbers in the standard form: a) 0.000007649 b) 465300000000
SHORT ANSWER TYPE- 5 QUESTIONS. (3 Marks each)	
Q8.	The diameter of a wire in a computer chip is 0.00003m. If 250 such wires are tightly packed in a cylinder, Express the diameter of the cylinder in the standard form using exponential form.
Q9.	Simplify : $\left\{6^{-1} + \left(\frac{3}{2}\right)^{-1}\right\}^{-1}$
Q10.	Evaluate : $\frac{16^{-1} \times 5^{3}}{2^{-4}}$
Q11.	Calculate the missing value of "x" in the following expression: $\left(\frac{11}{9}\right)^{3} \times \left(\frac{11}{9}\right)^{-3} \times \left(\frac{11}{9}\right)^{2} = \left(\frac{11}{9}\right)^{x\ -\ 1}$
Q12.	Simplify: $(3)^{-3} \times \left(\frac{1}{3}\right)^{-5} \times \left(\frac{1}{3}\right)^{-2}$
LONG ANSWER TYPE- 3 QUESTIONS. (4 Marks each)	
Q.13	Evaluate: $\left\{5^{-1} + \left(\frac{1}{2}^{-2}\right) + 2^{-1}\right\}^{-1}$
Q14.	Simplify: $\frac{4^{-3} \times a^{-5} \times b^{-4}}{4^{-5} \times a^{-8} \times b^{3}} \quad (a, b \neq 0)$
Q15.	Simplify: $\frac{5^{-3} \times 6^{-5} \times 81 \times 4}{3^{-7} \times 10^{-3}}$

ANSWERS					
Q1.	a) 0.00000000837 b)2100000	**Q2.**	$(7)^{10}$	**Q3.**	50
Q4.	6	**Q5.**	$(2)^{11}$	**Q6.**	9
Q7.	a) $7.649 \times (10)^{-6}$ b) $4.653 \times (10)^{11}$	**Q8.**	$7.5 \times (10)^{-3}$m	**Q9.**	$\frac{6}{5}$
Q10.	125	**Q11.**	3	**Q12.**	$(3)^4 = 81$
Q13.	$16a^3b^{-7}$	**Q14.**	$\frac{10}{47}$	**Q15.**	729