



# INDIAN SCHOOL AL WADI AL KABIR

Class VII, Mathematics (2023-24)

## Worksheet DTQ – EXPONENTS & POWERS

### SHORT ANSWER TYPE QUESTIONS- 7 QUESTIONS. (2 Marks each)

<b>Q1.</b>	Express in exponential form: (i) $2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 5$ (ii) $7 \times 7 \times 7 \times z \times z \times z \times z$
<b>Q2.</b>	Write in standard form: (i) 15305.7      (ii) 20368000
<b>Q3.</b>	Express in exponential form: 2304
<b>Q4.</b>	Find the value of : (i) $10^3$ (ii) $(-6)^5$
<b>Q5.</b>	Write the decimal number for: (i) $6 \times 10^4 + 7 \times 10^3 + 1 \times 10^2 + 3 \times 10^0$ (ii) $8 \times 10^5 + 5 \times 10^3 + 7 \times 10^1 + 2 \times 10^0$
<b>Q6.</b>	Simplify and express in exponential form: $(3^7 \div 3^5)^4$
<b>Q7.</b>	Find the value of $(3^0 - 2^0) \times (3^0 + 2^0)$

### SHORT ANSWER TYPE- 5 QUESTIONS. (3 Marks each)

<b>Q8.</b>	Simplify by laws of exponents: $\frac{(5^2)^4 \times 2^8}{5^5 \times (2^3)^2}$
<b>Q9.</b>	Express as a product of powers of prime numbers: $121 \times 243$
<b>Q10.</b>	Write the expanded form of following by using the exponents: (i) 80094      (ii) 943604
<b>Q11.</b>	Simplify: (i) $\{(6^3)^2 \times 6^4\} \div 6^8$ (ii) $49^4 \div 7^3$
<b>Q12.</b>	Find the value of: (i) $2^4 \times (-3)^2 \times 5^2$ (ii) $\frac{11^1 \times 7^2}{3^0}$

**LONG ANSWER TYPE- 3 QUESTIONS. (4 Marks each)****Q13.** Simplify by using laws of exponents:

$$\frac{15^4 \times 18^3}{3^4 \times 5^3 \times 12}$$

**Q14.** Simplify and express in exponential form by using laws of exponents:

$$\frac{((7^2)^5 \times 7^6) \div 7^3}{(7^2 \div 7^0) \times 7^4}$$

**Q15.** Simplify by using laws of exponents:

$$\frac{6^4 \times 9^2 \times 25^3}{3^2 \times 4^2 \times 15^6}$$

**ANSWERS**

<b>Q1.</b>	(i) $2^4 \times 3^2 \times 5^2$ (ii) $7^3 \times 2^4$	<b>Q2.</b>	(i) $1.53057 \times 10^4$ (ii) $2.0368 \times 10^7$	<b>Q3.</b>	$2^8 \times 3^2$
<b>Q4.</b>	(i) 1000 (ii) - 7776	<b>Q5.</b>	(i) 67103 (ii) 805072	<b>Q6.</b>	$3^8$
<b>Q7.</b>	0	<b>Q8.</b>	500	<b>Q9.</b>	$11^2 \times 3^5$
<b>Q10.</b>	(i) $8 \times 10^4 + 9 \times 10^1 + 4 \times 10^0$ (ii) $9 \times 10^5 + 4 \times 10^4 + 3 \times 10^3 + 6 \times 10^2 + 4 \times 10^0$	<b>Q11.</b>	(i) 36 (ii) 16807	<b>Q12.</b>	(i) 3600 (ii) 539
<b>Q13.</b>	2430	<b>Q14.</b>	$7^7$	<b>Q15.</b>	1