

CLASS 7
MATHEMATICS
ANSWERS
(EXPONENTS)

Question 1.

$$\begin{aligned} \text{(i)} \quad & (2^{5-8})^5 \times 2^{-5} \\ & = (2^{-3 \times 5}) \times 2^{-5} \\ & = 2^{-15} \times 2^{-5} \\ & = 2^{-20} \end{aligned}$$

$$= 1/2^{20} \text{ Ans.}$$

$$\begin{aligned} \text{(ii)} \quad & 1^2/(2^3)^2 \\ & = 1/2^3 \times 2 \end{aligned}$$

$$= 1/2^6 \text{ Ans.}$$

Question 2.

$$\begin{aligned} \text{(i)} \quad & 2500 = 25 \times 100 = 25 \times 10^2 \\ & = [(25/10) \times 10] \times 10^2 \\ & = 2.5 \times (10 \times 10^2) = 2.5 \times 10^3 \text{ Ans.} \end{aligned}$$

$$\text{(ii)} \quad 0.8 = 8/10 = 8 \times 10^{-1} \text{ Ans.}$$

$$\begin{aligned} \text{(iii)} \quad & 0.0027 = 27/10000 = 27/10^4 \\ & = [(27/10) \times 10]/10000 \\ & = (2.7 \times 10)/10^4 = 2.7 \times 1/10^3 \\ & = 2.7 \times 10^{-3} \text{ Ans.} \end{aligned}$$

Exercise 4.1

1 (ii) 625

$$5 \overline{)625}$$

$$5 \overline{)125}$$

$$5 \overline{)25}$$

5

$$625 = 5 \times 5 \times 5 \times 5 = 5^4 \text{ Ans}$$

$$2. 4^5$$

$$4 \times 4 \times 4 \times 4 \times 4 = 1024 \text{ Ans}$$

$$3. 5 \times 5 \times 2 \times 2 \times 2$$

$$5^2 \times 2^3 \text{ Ans}$$

$$4. 216$$

$$2 \overline{)216}$$

$$2 \overline{)108}$$

$$2 \overline{)54}$$

$$3 \overline{)27}$$

$$3 \overline{)9}$$

3

$$216 = 2^3 \times 3^3 \text{ Ans}$$

Exercise 4.2

$$1. (i) 2^5 \times 2^3 = 2^{5+3} = 2^8 \text{ Ans}$$

$$(vii) (6^2)^4 = 6^{2 \times 4} = 6^8 \text{ Ans}$$

$$(xv) a^3 \div b^3 = (a/b)^3 \text{ Ans}$$

$$6. (2 \times 3^4 \times 2^5) / (3^2 \times 2^2 \times 2)$$

$$= (2^{1+5-4}) (3^{4-2})$$

$$= 2^2 \times 3^2$$

$$= (2 \times 3)^2 = 6^2 = 36 \text{ Ans}$$