

$$(iii) 9a^2b^2c^3, 15a^3b^2c^4$$

$$9a^2b^2c^3 = 3 \times 3 \times a \times a \times b \times b \times c \times c \times c$$

$$15a^3b^2c^4 = 3 \times 5 \times a \times a \times a \times b \times b \times c \times c \times c \times c$$

$$\therefore \text{GCD} = 3 \times a \times a \times b \times b \times c \times c \times c$$

$$= 3a^2b^2c^3$$

$$(iv) 64x^8, 240x^6$$

$$64x^8 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times x \times x \times x \times x \times x \times x \times x \times x$$

$$240x^6 = 2 \times 2 \times 2 \times 3 \times 2 \times 5 \times x \times x \times x \times x \times x \times x$$

$$\therefore \text{GCD} = 2 \times 2 \times 2 \times 2 \times x \times x \times x \times x \times x \times x$$

$$= 16x^6$$

$$(v) ab^2e^3, a^2b^3e, a^3bc^2$$

$$ab^2e^3 = a \times b \times b \times e \times e \times e$$

$$a^2b^3e = a \times a \times b \times b \times b \times e$$

$$a^3bc^2 = a \times a \times a \times b \times c \times c$$

$$\therefore \text{GCD} = a \times b \times e = abe$$

$$(vi) 35x^5y^3z^4, 49x^2yz^3, 14xy^2z^2$$

$$35x^5y^3z^4 = 5 \times 7 \times x \times x \times x \times x \times x \times y \times y \times y \times z \times z \times z \times z$$

$$49x^2yz^3 = 7 \times 7 \times x \times x \times y \times z \times z \times z$$

$$14xy^2z^2 = 2 \times 7 \times x \times y \times y \times z \times z$$

$$\therefore \text{GCD} = 7 \times x \times y \times z \times z$$

$$= 7xy^2z^2$$

$$(vii) 25ab^3c, 100a^2be, 125ab$$

$$25ab^3c = 5 \times 5 \times a \times b \times b \times b \times c$$

$$100a^2be = 2 \times 2 \times 5 \times 5 \times a \times a \times b \times e$$

$$125ab = 5 \times 5 \times 5 \times a \times b$$

$$\therefore \text{GCD} = 5 \times 5 \times a \times b$$

$$= 25ab$$

(viii) $3abc$, $5xyz$, $7pqr$.

$$3abc = 1 \times 3 \times a \times b \times c$$

$$5xyz = 1 \times 5 \times x \times y \times z$$

$$7pqr = 1 \times 7 \times p \times q \times r$$

$$\therefore \text{GCD} = 1.$$

② Find the GCD of the following:

(i) $(2x+5)$, $(5x+2)$ (ii) a^{m+1} , a^{m+2} , a^{m+3}

(iii) $2a^2+a$, $4a^2-1$ (iv) $3a^2$, $5b^3$, $7c^4$

(v) x^4-1 , x^2-1 (vi) a^3-9ax^2 , $(a-3x)^2$

⇒ (i) $(2x+5)$, $(5x+2)$

$$\therefore (2x+5) = (2x+5) \times 1$$

$$(5x+2) = (5x+2) \times 1$$

$$\therefore \text{GCD} = 1$$

(ii) a^{m+1} , a^{m+2} , a^{m+3}

$$a^{m+1} = a^m \times a$$

$$a^{m+2} = a^m \times a \times a$$

$$a^{m+3} = a^m \times a \times a \times a$$

$$\therefore \text{GCD} = a^m \times a = a^{m+1}$$

(iii) $2a^2+a$, $4a^2-1$

$$2a^2+a = a(2a+1)$$

$$4a^2-1 = (2a+1)(2a-1)$$

$$\therefore \text{GCD} = (2a+1)$$