



1. If $2^f = 4$, find f

- (i) 0 (ii) 1 (iii) 2 (iv) 5 (v) 3

2. If $5^e = 625$, find 8^e

- (i) 4094 (ii) 4096 (iii) 4097 (iv) 4095 (v) 4098

3. If $4^{(16t+3)} = 64^{(5t+4)}$, find t

- (i) 10 (ii) 9 (iii) 8 (iv) 11 (v) 6

4. If $1024^{2h} = 256^{(2h+1)}$, find h

- (i) 3 (ii) 1 (iii) (-1) (iv) 2 (v) 5

5. If $27^{(r+2)} = 243^{24} = 3^s$, find s

- (i) 118 (ii) 121 (iii) 119 (iv) 120 (v) 123

6. If $2^d = 8$, find $2^{(d+3)}$

- (i) 66 (ii) 64 (iii) 62 (iv) 65 (v) 63

7. If $(5^{630})^5 = (5^6)^q$, find q

- (i) 525 (ii) 526 (iii) 524 (iv) 527 (v) 523

8. If $625 \times 5^p = 5^{10}$, find p

- (i) 3 (ii) 5 (iii) 6 (iv) 9 (v) 7

9. If $3^{(3b+3)} \div 9 = 3^{13}$, find b

- (i) 5 (ii) 3 (iii) 2 (iv) 6 (v) 4

10. Which of the following statements are true?

a) $a \cdot x^m = a^m \cdot x^m$

b) $a^0 = 1$ ($a \neq 0$)

c) $a^m \cdot a^n = a^{mn}$

d) $(x^m)^n = x^{(m+n)}$

e) $(x^m)^n = (x^n)^m$

f) $\frac{x^m}{x^n} = x^{\frac{m}{n}}$

(i) {c,e} (ii) {b,e} (iii) {a,b} (iv) {a,e,b} (v) {d,f,b}

11. If $a^s = b$, $b^t = c$ and $c^u = a$, then $stu =$

(i) $(a+b+c)$ (ii) 1 (iii) -1 (iv) abc (v) 0

12. If $j^w = k^x = l^y = m^z$ and $jk = lm$, then

(i) $xw = yz$ (ii) $\frac{1}{x} + \frac{1}{w} = \frac{1}{y} + \frac{1}{z}$ (iii) $\frac{1}{x} + \frac{1}{y} = \frac{1}{w} + \frac{1}{z}$ (iv) $\frac{1}{x} + \frac{1}{z} = \frac{1}{y} + \frac{1}{w}$ (v) $xy = wz$

13. If $h^{(u-1)} = ij$, $i^{(v-1)} = jh$, $j^{(w-1)} = hi$ then

a) $(u+v+w) = 1$

b) $uv + vw + wu = 0$

c) $uv + vw + wu = uvw$

d) $uv + vw + wu = 1$

e) $uvw = 1$

(i) {a,c} (ii) {c} (iii) {d,e,c} (iv) {b,c}

14. Simplify $\left(\frac{z^h}{z^j}\right)^{(h+i)}$ $\left(\frac{z^j}{z^i}\right)^{(i+j)}$ $\left(\frac{z^i}{z^h}\right)^{(j+h)}$

(i) z (ii) $z^{(h+i+j)}$ (iii) -1 (iv) 0 (v) 1

15. Simplify $(v^k)^{(l-m)}$ $(v^l)^{(m-k)}$ $(v^m)^{(k-l)}$

(i) 0 (ii) -1 (iii) v (iv) $v^{(k+l+m)}$ (v) 1

16. Simplify $(s^{(h+i)})^{(h-i)}$ $(s^{(i+j)})^{(i-j)}$ $(s^{(j+h)})^{(j-h)}$

(i) s (ii) 1 (iii) 0 (iv) $s^{(h+i+j)}$ (v) -1

17. Simplify $\left(\frac{\sqrt[k]{m}}{\sqrt[l]{m}}\right)^k \left(\frac{\sqrt[l]{m}}{\sqrt[k]{m}}\right)^l$

- (i) $\sqrt[k+l]{m}$ (ii) 0 (iii) $\sqrt[k+l+m]{m}$ (iv) -1 (v) 1

18. Simplify $\left(\frac{4^b \cdot 25^{(b-2)} \cdot 36^{(b-2)}}{16^{(b-2)} \cdot 5^{(b-2)} \cdot 6^{(b-5)}}\right)$

- (i) $4^{(-b+4)} \cdot 5^{(b-2)} \cdot 6^{(b+1)}$ (ii) $4^{(b+2)} \cdot 5^{(-b+2)} \cdot 6^{(-b+8)}$ (iii) $4^{(-b+4)} \cdot 5^{(-b+2)} \cdot 6^{(-b+8)}$
 (iv) $4^2 \cdot 5^0 \cdot 6^3$

19. $(c^4 + d^4)^0 =$

- (i) 0 (ii) (-2) (iii) 3 (iv) $c^4 + d^4$ (v) 1

Assignment Key

1) (iii)	2) (ii)	3) (ii)	4) (iv)	5) (iv)	6) (ii)
7) (i)	8) (iii)	9) (v)	10) (ii)	11) (ii)	12) (ii)
13) (ii)	14) (v)	15) (v)	16) (ii)	17) (v)	18) (i)
19) (v)					