EduSahara™ Assignment

Name : Equations involving Base Powers

Chapter : Exponents

Grade : ICSE Grade VIII

1. If $3^{t}=9$, find t

   (i) 1 (ii) 4 (iii) 2 (iv) (-1) (v) 3

2. If $5^{r}=625$, find 7^{r}

   (i) 2403 (ii) 2402 (iii) 2400 (iv) 2401 (v) 2398

3. If $2^{(13v+1)}=8^{(4v+5)}$, find v

   (i) 11 (ii) 13 (iii) 15 (iv) 14 (v) 17

4. If $81^{3u}=729^{2u}$, find u

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

5. If $25^{(x+15)}=3125^{24}=5^{y}$, find y

   (i) 119 (ii) 123 (iii) 117 (iv) 120 (v) 121

6. If $5^{r}=25$, find $5^{(2r+3)}$

   (i) 78128 (ii) 78124 (iii) 78125 (iv) 78126 (v) 78123

7. $(x)^{(c-d)}.(x)^{(d-e)}.(x)^{(e-c)}=$

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

8. If $\left(5^{315}\right)^{2}=\left(5^{30}\right)^{d}$, find d

   (i) 20 (ii) 18 (iii) 22 (iv) 23 (v) 21

9. If $9\times 3^{w}=3^{6}$, find w

   (i) 5 (ii) 4 (iii) 6 (iv) 1 (v) 3

10. If $8^{(4h+1)}\div 512=8^{6}$, find h

    (i) 1 (ii) 2 (iii) (-1) (iv) 4 (v) 3

11. If $81000=q^{3}\times r^{3}\times s^{4}$, find q,r,s

    (i) (7,2,1) (ii) (7,2,3) (iii) (5,2,3) (iv) (5,4,3) (v) (5,2,5)

12. If $3472875=5^{e}\times 3^{f}\times 7^{g}$, find e,f,g

    (i) (3,4,5) (ii) (3,6,3) (iii) (3,4,3) (iv) (5,4,3) (v) (5,4,1)

13. If $c^w = d$, $d^x = e$ and $e^y = c$, then $wxy =$

(i) -1 (ii) 1 (iii) 0 (iv) $(c+d+e)$ (v) cde

14. If $k^u = l^v = m^w = n^x$ and $kl = mn$, then

(i) $vw = ux$ (ii) $vu = wx$ (iii) $\frac{1}{v} + \frac{1}{u} = \frac{1}{w} + \frac{1}{x}$ (iv) $\frac{1}{v} + \frac{1}{w} = \frac{1}{u} + \frac{1}{x}$ (v) $\frac{1}{v} + \frac{1}{x} = \frac{1}{w} + \frac{1}{u}$

15. If $i^{(x-1)} = jk$, $j^{(y-1)} = ki$, $k^{(z-1)} = ij$ then

a) $xy + yz + zx = xyz$
b) $xy + yz + zx = 0$
c) $(x+y+z) = 1$
d) $xyz = 1$
e) $xy + yz + zx = 1$

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

16. Simplify $\left(\frac{u^m}{u^n}\right)^{(m+n)} \left(\frac{u^n}{u^o}\right)^{(n+o)} \left(\frac{u^o}{u^m}\right)^{(o+m)}$

(i) 1 (ii) $u^{(m+n+o)}$ (iii) u (iv) 0 (v) -1

17. Simplify $\left(u^f\right)^{(g-h)} \left(u^g\right)^{(h-f)} \left(u^h\right)^{(f-g)}$

(i) -1 (ii) 0 (iii) 1 (iv) $u^{(f+g+h)}$ (v) u

18. Simplify $\left(v^{(j+k)}\right)^{(j-k)} \left(v^{(k+l)}\right)^{(k-l)} \left(v^{(l+j)}\right)^{(l-j)}$

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

19. Simplify $\left(\frac{w^p}{w^q}\right)^r \left(\frac{w^q}{w^r}\right)^p \left(\frac{w^r}{w^p}\right)^q$

(i) -1 (ii) $w^{(p+q+r)}$ (iii) w (iv) 1 (v) 0

20. $\left(c^9 + d^9\right)^0 =$

(i) 1 (ii) 4 (iii) $c^9 + d^9$ (iv) (-2) (v) 0

Assignment Key

1) (iii)	2) (iv)	3) (iv)	4) (i)	5) (iv)	6) (iii)
7) (v)	8) (v)	9) (ii)	10) (ii)	11) (iii)	12) (iii)
13) (ii)	14) (iii)	15) (i)	16) (i)	17) (iii)	18) (iv)
19) (iv)	20) (i)				