EduSahara™ Assignment

Name : Equations involving Base Powers

Chapter : Exponents

Grade : ICSE Grade VIII

1. If $2^{i}=16$, find i

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

2. If $2^{g}=4$, find 3^{g}

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

3. If $3^{(3r+5)}=9^{(r+5)}$, find r

   (i) 5 (ii) 2 (iii) 8 (iv) 4 (v) 6

4. If $125^{3v}=15625^{(v+1)}$, find v

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

5. If $25^{(q+9)}=625^{16}=5^{r}$, find r

   (i) 66 (ii) 65 (iii) 64 (iv) 61 (v) 63

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

   (i) 65 (ii) 61 (iii) 64 (iv) 63 (v) 66

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

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

8. If $\left(8^{21}\right)^{120}=\left(8^{4}\right)^{g}$, find g

   (i) 631 (ii) 628 (iii) 629 (iv) 630 (v) 632

9. If $625\times 5^{x}=5^{10}$, find x

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

10. If $10^{(2s+5)}\div 10000=10^{9}$, find s

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

11. If $4900=p^{2}\times q^{2}\times r^{2}$, find p,q,r

    (i) (8,5,1) (ii) (7,5,2) (iii) (7,5,3) (iv) (7,6,2) (v) (8,5,2)

12. If $22500=2^{e}\times 5^{f}\times 3^{g}$, find e,f,g

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

13. If $j^t = k$, $k^u = l$ and $l^v = j$, then $tuv =$

(i) 1 (ii) jkl (iii) 0 (iv) -1 (v) $(j+k+l)$

14. If $b^w = c^x = d^y = e^z$ and $bc = de$, then

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

15. If $j^{(u-1)} = kl$, $k^{(v-1)} = lj$, $l^{(w-1)} = jk$ then

a) $uvw = 1$
b) $uv + vw + wu = 0$
c) $uv + vw + wu = uvw$
d) $uv + vw + wu = 1$
e) $(u+v+w) = 1$

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

16. Simplify $\left(\frac{v^a}{v^b}\right)^{(a+b)} \left(\frac{v^b}{v^c}\right)^{(b+c)} \left(\frac{v^c}{v^a}\right)^{(c+a)}$

(i) -1 (ii) $v^{(a+b+c)}$ (iii) 1 (iv) 0 (v) v

17. Simplify $\left(t^c\right)^{(d-e)} \left(t^d\right)^{(e-c)} \left(t^e\right)^{(c-d)}$

(i) t (ii) 0 (iii) 1 (iv) -1 (v) $t^{(c+d+e)}$

18. Simplify $\left(v^{(e+f)}\right)^{(e-f)} \left(v^{(f+g)}\right)^{(f-g)} \left(v^{(g+e)}\right)^{(g-e)}$

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

19. Simplify $\left(\frac{v^k}{v^l}\right)^m \left(\frac{v^l}{v^m}\right)^k \left(\frac{v^m}{v^k}\right)^l$

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

20. $\left(e^9 + f^9\right)^0 =$

(i) (-2) (ii) $e^9 + f^9$ (iii) 0 (iv) 1 (v) 3

Assignment Key

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