EduSahara™ Assignment

Name : Equations involving Base Powers

Chapter : Exponents

Grade : ICSE Grade VIII

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1. If $4^{j}=256$, find j

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

2. If $5^{v}=25$, find 6^{v}

   (i) 36 (ii) 33 (iii) 39 (iv) 35 (v) 37

3. If $3^{(11k+2)}=9^{(5k+3)}$, find k

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

4. If $81^{(g+1)}=27^{2g}$, find g

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

5. If $27^{(d+19)}=243^{48}=3^{e}$, find e

   (i) 242 (ii) 241 (iii) 239 (iv) 240 (v) 237

6. If $2^{v}=4$, find $2^{(v+3)}$

   (i) 33 (ii) 30 (iii) 31 (iv) 34 (v) 32

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

   (i) (-2) (ii) 4 (iii) 2 (iv) 0 (v) 1

8. If $\left(4^{60}\right)^{42}=\left(4^{120}\right)^{v}$, find v

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

9. If $64\times 4^{s}=4^{9}$, find s

   (i) 5 (ii) 6 (iii) 7 (iv) 4 (v) 8

10. If $2^{(4v+5)}\div 4=2^{19}$, find v

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

11. If $777924=i^{4}\times j^{2}\times k^{4}$, find i,j,k

    (i) (3,4,7) (ii) (5,2,7) (iii) (3,2,9) (iv) (3,2,7) (v) (5,2,5)

12. If $9000=2^{w}\times 3^{x}\times 5^{y}$, find w,x,y

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

13. If $c^t = d$, $d^u = e$ and $e^v = c$, then $tuv =$

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

14. If $a^t = b^u = c^v = d^w$ and $ab = cd$, then

(i) $\frac{1}{u} + \frac{1}{w} = \frac{1}{v} + \frac{1}{t}$ (ii) $\frac{1}{u} + \frac{1}{t} = \frac{1}{v} + \frac{1}{w}$ (iii) $uv = tw$ (iv) $\frac{1}{u} + \frac{1}{v} = \frac{1}{t} + \frac{1}{w}$ (v) $ut = vw$

15. If $e^{(w-1)} = fg$, $f^{(x-1)} = ge$, $g^{(y-1)} = ef$ then

a) $wx + xy + yw = wxy$
b) $wx + xy + yw = 1$
c) $(w+x+y) = 1$
d) $wxy = 1$
e) $wx + xy + yw = 0$

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

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

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

17. Simplify $\left(w^j\right)^{(k-l)} \left(w^k\right)^{(l-j)} \left(w^l\right)^{(j-k)}$

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

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

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

19. Simplify $\left(\frac{s^m}{s^n}\right)^o \left(\frac{s^n}{s^o}\right)^m \left(\frac{s^o}{s^m}\right)^n$

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

20. $\left(b^{(-2)} + c^{(-2)}\right)^0 =$

(i) 3 (ii) 0 (iii) $b^{(-2)} + c^{(-2)}$ (iv) (-2) (v) 1

Assignment Key

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

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