EduSahara™ Assignment

Name : Equations involving Base Powers

Chapter : Exponents

Grade : ICSE Grade VIII

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

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

2. If $2^{t}=4$, find 4^{t}

   (i) 17 (ii) 19 (iii) 16 (iv) 13 (v) 15

3. If $4^{(4q+2)}=64^{(q+4)}$, find q

   (i) 10 (ii) 11 (iii) 12 (iv) 9 (v) 8

4. If $256^{(j+1)}=64^{2j}$, find j

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

5. If $125^{(r+3)}=625^{36}=5^{s}$, find s

   (i) 141 (ii) 143 (iii) 144 (iv) 145 (v) 146

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

   (i) 515 (ii) 510 (iii) 513 (iv) 512 (v) 511

7. $(x)^{(a-b)}.(x)^{(b-c)}.(x)^{(c-a)}=$

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

8. If $\left(8^{2}\right)^{270}=\left(8^{4}\right)^{w}$, find w

   (i) 137 (ii) 132 (iii) 134 (iv) 135 (v) 136

9. If $16\times 2^{e}=2^{9}$, find e

   (i) 5 (ii) 4 (iii) 6 (iv) 7 (v) 3

10. If $10^{(4e+3)}\div 1000=10^{16}$, find e

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

11. If $826875=g^{2}\times h^{4}\times i^{3}$, find g,h,i

    (i) (7,5,6) (ii) (7,5,3) (iii) (7,8,3) (iv) (10,5,0) (v) (10,5,3)

12. If $5400=2^{x}\times 3^{y}\times 5^{z}$, find x,y,z

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

13. If $d^u = e$, $e^v = f$ and $f^w = d$, then $uvw =$

(i) def (ii) -1 (iii) 0 (iv) $(d+e+f)$ (v) 1

14. If $c^w = d^x = e^y = f^z$ and $cd = ef$, then

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

15. If $a^{(x-1)} = bc$, $b^{(y-1)} = ca$, $c^{(z-1)} = ab$ then

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

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

16. Simplify $\left(\frac{u^g}{u^h}\right)^{(g+h)} \left(\frac{u^h}{u^i}\right)^{(h+i)} \left(\frac{u^i}{u^g}\right)^{(i+g)}$

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

17. Simplify $\left(u^p\right)^{(q-r)} \left(u^q\right)^{(r-p)} \left(u^r\right)^{(p-q)}$

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

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

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

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

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

20. $\left(a^{(-5)} + b^{(-5)}\right)^0 =$

(i) 3 (ii) $a^{(-5)} + b^{(-5)}$ (iii) 0 (iv) (-2) (v) 1

Assignment Key

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