EduSahara™ Assignment

Name : Equations involving Base Powers

Chapter : Exponents and Powers

Grade : SSC Grade VIII

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

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

2. If $2^{t}=32$, find 4^{t}

   (i) 1023 (ii) 1026 (iii) 1025 (iv) 1024 (v) 1022

3. If $3^{(7c+2)}=9^{(3c+6)}$, find c

   (i) 10 (ii) 7 (iii) 9 (iv) 11 (v) 13

4. If $243^{(v+1)}=81^{(v+2)}$, find v

   (i) 2 (ii) 3 (iii) 6 (iv) 0 (v) 4

5. If $125^{(g+9)}=625^{36}=5^{h}$, find h

   (i) 145 (ii) 142 (iii) 144 (iv) 143 (v) 146

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

   (i) 15625 (ii) 15628 (iii) 15622 (iv) 15624 (v) 15626

7. If $\left(10^{2}\right)^{108}=\left(10^{8}\right)^{i}$, find i

   (i) 26 (ii) 28 (iii) 27 (iv) 24 (v) 29

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

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

9. If $3^{(4v+1)}\div 81=3^{13}$, find v

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

10. Which of the following statements are true?

a) $a^m . a^n = a^{mn}$

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

c) $\left(x^m\right)^n = \left(x^n\right)^m$

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

e) $\left(x^m\right)^n = x^{(m+n)}$

f) $a . x^m = a^m . x^m$

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

11. If $c^s = d$, $d^t = e$ and $e^u = c$, then $stu =$

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

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

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

13. If $c^{(w-1)} = de$, $d^{(x-1)} = ec$, $e^{(y-1)} = cd$ then

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

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

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

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

15. Simplify $\left(v^c\right)^{(d-e)} \left(v^d\right)^{(e-c)} \left(v^e\right)^{(c-d)}$

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

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

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

17. Simplify $\left(\frac{x^{e}}{x^{f}}\right)^{g}\left(\frac{x^{f}}{x^{g}}\right)^{e}\left(\frac{x^{g}}{x^{e}}\right)^{f}$

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

18. Simplify $\left(\frac{8^{f}.81^{(f-2)}.100^{(f-4)}}{64^{(f-2)}.9^{(f-4)}.10^{(f-2)}}\right)$

(i) $8^{(-f+4)}.9^{f}.10^{(f-6)}$ (ii) $8^{(f+2)}.9^{(-f+6)}.10^{(-f)}$ (iii) $8^{2}.9^{2}.10^{(-2)}$ (iv) $8^{(-f+4)}.9^{(-f+6)}.10^{(-f)}$

19. $\left(e^{7}+f^{7}\right)^{0}=$

(i) (-1) (ii) 1 (iii) 3 (iv) 0 (v) $e^{7}+f^{7}$

Assignment Key

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