

Special Algebra By Alok Sir

Type-VI

1. If $x^4 + \frac{1}{x^4} = 194$, the value of $x^3 + \frac{1}{x^3}$ is

(a) 52

(b) 62

(c) 50

(d) 54

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2. If $m + \frac{1}{m-2} = 4$ then the value of

$(m-2)^2 + \frac{1}{(m-2)^2}$ is

(a) -2

(b) 0

(c) 2

(d) 4

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3. If $\frac{x^{24} + 1}{x^{12}} = 7$ then $\frac{x^{72} + 1}{x^{36}}$ is equal to

(a) 343

(b) 433

(c) 432

(d) 322

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4. If $x + \frac{1}{y} = 1$, $y + \frac{1}{z} = 1$ then the value of

$$z + \frac{1}{x} + x + y + \frac{1}{y} + \frac{1}{z}$$

(a) 1

(b) 3

(c) -1

(d) 0

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5. If $\frac{a}{1-a} + \frac{b}{1-b} + \frac{c}{1-c} = 1$ then the value of $\frac{1}{1-a} + \frac{1}{1-b} + \frac{c}{1-c}$ is

- (a) 1
- (b) 2
- (c) 3
- (d) 4

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6. If $xy + yz + zx = 0$, then

$\frac{1}{x^2 - yz} + \frac{1}{y^2 - zx} + \frac{1}{z^2 - xy}$ is

(a) 3

(b) 1

(c) $x + y + z$

(d) 0

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7. If $a + \frac{1}{b} = b + \frac{1}{c} = c + \frac{1}{a}$ ($a \neq b \neq c$) then the value of abc is

(a) ± 1

(b) ± 2

(c) 0

(d) $\pm \frac{1}{2}$

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8. If $\frac{a}{b} + \frac{b}{a} = 2$ then the value of $a - b$ is

(a) 2

(b) -1

(c) 0

(d) 1

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9. If $x + \frac{1}{x} = -2$ then the value of $x^p + x^q$ is

(where P is an even number and q is an odd number):

(a) 2

(b) -2

(c) 1

(d) 0

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10. If $a + \frac{1}{a} = 1$ then the value of

$a^{100} + a^{99} + a^{98} + a^{97} + a^{96} + a^{95}$ is

(a) 0

(b) -2

(c) -1

(d) 6

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11. If $a + \frac{1}{a} = -1$; then the value of $a^{50} + \frac{1}{a^{50}}$ is

equals

(a) 1

(b) 0

(c) 2

(d) -1

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12. If $x^{\frac{1}{4}} + \frac{1}{x^{\frac{1}{4}}} = 1$; then the value of $x^{252} + \frac{1}{x^{252}}$ is

equals

(a) 2

(b) 0

(c) 1

(d) -1

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13. If $\left(a + \frac{1}{a}\right)^2 = 3$ then the value of $a^6 - \frac{1}{a^6} + 2$ is

(a) 1

(b) 2

(c) $3\sqrt{3}$

(d) 5

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14. If $x + \frac{1}{x} = -\sqrt{3}$ then $x^{67} + x^{53} + x^{43} + x^{29} + x^{24}$
 $+ x^{12} + x^6 + 3$ is equal to

(a) $\sqrt{3}$

(b) 0

(c) $2(2 + \sqrt{3})$

(d) $2(2 - \sqrt{2})$

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15. If $\left(x + \frac{1}{x}\right)^2 = 3$ then the value of $x^{206} + x^{200} + x^{90} + x^{84} + x^{18} + x^{12} + 1$ will be

- (a) 84
- (b) 206
- (c) 0
- (d) 1

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16. If $(x + 3)^2 + (y - 5)^2 + (z + 2)^2 = 0$. Find the value of $\sqrt{x + y + z}$.

(a) -1

(b) 2

(c) -2

(d) 0

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17. If $a^2 + b^2 + c^2 = 2(a - 2b - 2c) - 9$. Find the value of $a^3 + b^4 - c^2$

(a) 3

(b) 0

(c) 13

(d) -13

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18. If $x^2 + y^2 + \frac{1}{x^2} + \frac{1}{y^2} = 4$. Then $x^2 + y^2$ is equal

to

(a) -1

(b) 1

(c) 2

(d) 4

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19. If $a^2 + b^2 + c^2 - 4a - 6b - 8c + 29 = 0$. The find the value of $a + b + c$.

(a) -9

(b) -3

(c) 5

(d) 9

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