MATHEMATICS

ALGEBRAIC EXPRESSIONS

1.Simplify : $81a^2b^2c^2+64a^6b^2-144a^4b^2c$ @ $a^2b^2[9c+8a^2]^2$ @ $-a^2b^2[9c-8a^2]^2$ @ $a^2b^2[9c-8a^2]^2$ @None@0010

2.Simplify : $(a^2+b^2+2ab)+(a^2+b^2-2ab)$ @ – 2a² + 2b²@ 2a² – 2b²@ 2a² + 2b²@ (2a² – 2b²)@0010

3.Simplify : $2x-[3y-\{2x-(y-x)\}]$@5x + 4y@5x – 4y@– 5x – 4y@– 5x + 4y@0100

4. - m -[m + {m + n – 2m – (m – 2)} – n]=@2n@3n@– 2n@– 3n@0010

5.Simplify : 85-[12x – 7(8x - 3) -2{10x - 5(2 - 4x)}]@44+104x @-44+104x @44-104x @-44-104@1000

6.Subtract $2x^3+x^2-4x-1$ from 5x³ + 5x² + 9@ $-3x^3+4x^2+4x+10$ @ $3x^3+4x^2+4x+10$ @ $3x^3+4x^2+4x-10$ @ $-(3x^3+4x^2+4x+10)$ @0100

7.a⁴ + 4a²b² + b⁴ is more than a⁴ – 8a²b² + b⁴ by -@12a²b²@– 12a²b²@2a⁴ + 2b⁴@None@1000

8.The value of $(x+2y+2z)^2+(x-2y-2z)^2$ is -@ $2x^2+8y^2+8z^2$ @ $2x^2+8y^2+8z^2+8xyz$@ $2x^2+8y^2+8z^2-8yz$ $2x^2+8y^2+8z^2+16yz$@0001

9.Simplify: xy – [yz – zx – {yx – (3y – xz) – (xy – zy)}]@xy + 2zx + 3y@xy – 2zx – 3y@3xy + 2zx -3y @xy + 2zx – 3y@0001

10. Simplify: -3 (a + b) + 2 (2a – b) + 4a - 5@5 (a – b + 1)@5 (a + b + 1)@5 (a + b – 1)@5 (a – b – 1)@0001

11. If a = – 2, b = 3 and c = 4, then the value of $a^3+b^3+3a^2c-4bc^3$ is -@107@– 107@701@– 701@0001

12. If $P=a^3-4b^3+3a^2b,\ Q=-4a^3+13a^2b+7b^3,\ R=-4a^2b+8b^3+3a^3$ and $S=12a^2b-5b^3+9a^3$ andP–Q+R–Sis equal to @ $-a^3+3b^3-26a^2b$@ $a^3-2b^3+26a^2b$@ $a^3+2b^3-26a^2b$@ $-a^3-2b^3-26a^2b$@1000

13. Simplify: 7 – [3x + {– 2y + 3z – (3y + 5z) + 8} – (3y² + 7x) + 9] @ – 1 + 4x – 3y – 3z + 3y² @ – 10 + 4x + 5y + 2z + 3y²@ – 10 – 4x + 5y – 2z + 3y²@ – 1 + 14x – 5y + 2z + 3y²@0100

14. If $m=\frac{3x-4}{5};\ n=\frac{x-7}{3}$ and 3 (m + n) = 13 then find the value of x -@6@8@10@16@0100

15. If P = x + 1 and $\frac{4P-3}{2}-\frac{3x+2}{5}=\frac{3}{2}$, then the value of x is -@1@2@– 1@1000

16. If $\frac{5x}{4}+\frac{6-x}{8}=\frac{6(x+3)}{3}-\frac{1}{6}$, then x =@ $x=-\frac{121}{22}$ @ $x=\frac{121}{12}$ @ $x=\frac{212}{21}$ @ $x=-\frac{122}{21}$ @ 0001

17. If the present age of Jacob's father is three times that of Jacob, after five years, sum of their ages would be 70 years, then the present age of Jacob's father is -@39years@45years@54 years@60years@0100

18. The population of town A is 4800 more than town B. If 3100 people move from town B to town A, the population of town A will be 11 times that of town B. The original total population of the two towns is -@12580@12780@13200@13300@0010

19. If the sum of two numbers is 184 and one-third of the smaller number exceeds one-seventh of the larger number by 8, then the larger number is -@112@72@104@80@1000

20.A person has only 25 paise and 50 paise coins. In total he has 40 coins and the value of them is Rs. 12.50. Find the number of 50 paise coins he has -@10@15@25@20@1000

21. Value of x in the equation $x-\left(\frac{4x-27}{3}-3\right)=2x-\frac{3x-4}{7}$ is -@2@4@6@8@0010

22. Simplify : $81a^2b^2c^2+64a^6b^2-144a^4b^2c$ @ $a^2b^2[9c+8a^2]^2$ @ $-a^2b^2[9c-8a^2]^2$ @ $a^2b^2[9c-8a^2]^2$ @ None@0010

23The degree of 3x²–9 is @1@2@3@4@0100

24The expression x + y + 2 is@ Monomial@ Binomial@ Trinomial@ None of these@0010
25The expression xyz is@ Monomial@ Binomial@ Trinomial@ None of these@1000
26Add $5a^2b$, $–8a^2b$ and $7a^2b$@ $–10a^2b$@$4a^2b$@$20a^2b$@$10a^2b$@0100
27Subtract $(a^2 + b^2 – 2ab)$ from $(a^2 + b^2 + 2ab)$@–4ab@–2ab@4ab@2ab@0010
28The degree of a polynomial $ax^5 – bx^4 + c$ is @9@5@4@1@0100
29The expression 4 (x –2) + 3 (x –1) is equal to @7x – 11@7x + 11@6x – 10@6x +10@1000
30Which expression is equal to 5 (2x + 1 – x – 4)? @ 9x – 3@5x – 15@5x – 3@5x + 25@0100
31Which one of the following is equivalent to the expression (2^5) (2^6)?@2048@230@411@430@1000
32A tanker contains 500 litres of water. Due to a small hole in the tanker, the quantity of water is decreasing at the rate of 9 litres every hour. What will be the quantity of water in the tank after 10 hours? @410 litres@491 litres@400 litres@90 litres@1000
33Subtract the sum of $(8a – 6a^2 + 9)$ and $(–10a – 8 + 8a^2)$ from – 3 is@$2a^2 – 2a – 2$@$2a^2 – 2a + 4$@ $–2a^2 + 2a – 4$@$–2a^2 + 2a – 2$ @0010
34An expression is taken away from $3x^2 – 4y^2 + 5xy + 20$ to obtain $– x^2 – y^2 + 6xy + 20$, then the expression is @$4x^2 – 3y^2 – xy$@$2x^2 – 5y^2 + xy + 40$@$3y^2 – xy – 4x^2$@$4x^2 + 3y^2 + xy$@1000
35By how much is $a^4 + 4a^2b^2 + b^4$ more than $a^4 – 8a^2b^2 + b^4$? @12 a^2b^2@$–12a^2b^2$@$2a^4 + 2b^4$@$10a^2b^2$@1000
36Simplify $(a^3 – 2a^2 + 4a – 5) – (–a^3 – 8a + 2a^2 + 5)$@$2a^3 + 7a^2 + 6a – 10$@$2a^3 + 7a^2 + 12 a – 10$ @$2a^3 – 4a^2 + 12a – 10$@$2a^3 – 4a^2 + 6a – 10$@0010
37Simplify the following expression x(y –z) – y (z – x) – z (x – y)@2x (y – z)@2y (z – x)@2x (z – y)@ None of these@1000
38The coefficient of x^2 in the expression $3x^3 –7x^2 + 5x + 9$ is@3@7@–7@5@0010
39Subtract (2a – 3b + 4c) from the sum of (a + 3b – 4c), (4a – b + 9c) and (–2a + 3c – b) @ a – 4b + 4c@ a + 4b – 4c@ –a + 4b + 4c@ a + 4b + 4c@0001
40If the value of $2x^3 – 2x^2 + x – a$ equals to 5, when x = 2, then the value of 'a' is@4@5@3@6@B
41 The value of $(0.05)^3$ is @ 0.000125@ 0.00125@ 0.0125@ 0.125@1000
42The value of 7.75 ÷ 0.25 is@31@0.0031@0.31@3.1@1000
43Simplify –@4xy@$8x^2 + 18y^2$@ 8xy@24xy@0001
44The product of (a – b) (a + b) (a^2+b^2) is @ $a^2– b^2$@ $a^5 – b^3$@$a^4 – b^4$ @ $a^2 + b^4$ @0010
45What is the missing term in the following product? $(2a^3 – 3) (5a^3 –2) = 10a^6$ + ...+ 6 @ $19a^3$ @ $–19a^3$ @ $16a^3$ @ $–16a^3$ @0100
46The value of $n^3 + 5n^2 + 5n – 2$ when n = –2 is@16@0@–40@10@0100
47The value of $9x^2 + 49y^2 – 42xy$ when x = 15 and y = 3 is@636@576@456@386@0100
48 Simplify: $4st (s – t) – 6s^2 (t – t^2) – 3t^2 (2s^2–s) + 2st (s – t)$ @ $–st^2$@ $–2st^2$@$–3st^2$@$–4st^2$@0010
49Divide $2x^3 – 4x^2$ by 2x @ $x^2 – 2x$ @ $–x^2 + 4$@ $–x^2 + 4x$@ $x^2 + 4$@1000
50Divide $–15x^5 y^4 z^3 + 10x^4 y^4 z^4 + 20x^3 y^2z$ by 5xyz @ $–3x^4 y^3 z^2 – 2x^3 y^3 z^3 + 4x^2 y$@ $–3x^4 y^3 z^2 + 2x^3 y^3 z^3 + 4x^2 y$@ $–3x^4 y^3 z^2 + 2x^3 y^3 z^3 – 4x^2 y$@ $3x^4 y^3 z^2 – 2x^3 y^3 z^3 – 4x^2 y$@0100
51.The value of the expression $\frac{n^2}{2} + \frac{n}{2}$ when n = 12 is@76@74@78@72@0010
52.If $\frac{7x}{3} – \frac{7}{6}$ is a polynomial, then the zero of the polynomial is@1/2, @-1/2,@0@ –2@1000
53.If the zero of the polynomial in 'x' is -5/4,then the polynomial is@4x – 5@5x – 4@ 5x + 4@4x + 5@0010
54.If A = $– 8x^2 – 6x + 10$, then its value when 'x' =1/2 is@6@4@5@7@0010
55.The third degree polynomial among the following is @$2x^{3-1} + 3x^{2-1}$ 5@$3x^{4-1} + 2x^{3-1} + 6x^{2-1} + 8$@$3x^{2-1} + 4x^{-2} + 5$@$2x^{5-3} + 3x^{4-3} + 7$@0100

56.Among the following the expression which is not a monomial is@ $\frac{4a^3b^2c^5}{23}$@– 147 x^3 y^2@ $\frac{2}{7}x^{-2}y^5z$ @ x^3 y^5 z^{12}@0010

57.If $x = \frac{a}{2}$, then the value of $4x^2 + 8x + 18$ is@ $a^2 + 2a + 8$@ $a^2 + 3a + 18$@ $a^2 + 4a + 18$@ $a^2 + 5a + 18$@0010

58.The value of the expression $\frac{-26}{3} - \frac{13x}{27}$ when x = $\frac{9}{13}$ is@– 8@– 10@– 9@– 11@0100

59.Degree of the polynomial p + q x^m + rx^{m + 2}+ 5x^{m + 3} + x ^{m + 4}is@m@m + 2@m + 3@m+ 4@0010

60.If $\frac{n(n+1)(2n+1)}{6}$
represents sum of the squares of first 'n' natural numbers, then its value when n = 10 is@365@375@395@385@0001

61.Degree of the polynomial $\frac{1}{2}x^5 + 3x^4 + 2x^3 + 3x^2 + 6$ is@4@3@5@2@0010

62.Degree of the monomial $\frac{3}{5}x^2y^6z^7$ is@15@9@8@13@1000

63.In a polynomial 3x + 5 where x = a + 2, then its value when a = 8 is@25@45@35@40@0010

64The sum of $\frac{3}{4}x^3, \frac{5}{6}x^3, -\frac{2}{3}x^3$ and $\frac{7}{2}x^3$ is @ $\frac{12}{53}x^3$@ $-\frac{53}{12}x^3$@ $\frac{53}{12}x^3$@ $-\frac{12}{53}x^3$@0010

65The simplified form of $3x^3 – 2x^2 – 8x – 6x^2 + 7x^3 + 9x + 8x^3 – 9x^2 + 6x$ is @– $18x^3 – 17x^2 + 7x$@$18x^3 – 17x^2 – 7x$@$18x^3 + 17x^2 – 7x$@ $18x^3 – 17x^2 + 7x$@0100

66The ascending order of the polynomials $– 3x^3 + 7x^2 – 9x^4 + 6x – 8$ is@– 8 + 6x + $7x^2$ – $3x^3$ + $9x^4$ @– 8 – 6x – $7x^2$ – $3x^3$ – $9x^4$ @– 8 + 6x + $7x^2$ – $3x^3$ – $9x^4$ @8 + 6x + $7x^2$ + $3x^3$ + $9x^4$ @1000

67If A = – 7x – 3x – 5x and B = 9x + 3x + 2x, then A + B is@ 2x @ – 2x@ – x@ – 3x@C

68If $\frac{1}{2}x - \frac{1}{3}x = A$ and $\frac{1}{3}x - \frac{1}{4}x = B$, then A – B is @ $\frac{1}{12}x$@ $-\frac{1}{12}x$@ – 2x@ 0@1000

69.The equivalent expression of $2x^3 – 3x^2 – 8x – 3$ is@$3x^3 – 5x^3 + 7x^2 – 5x^2 – 8x + 10x – 4 + 1$@$3x^3 – x^3 – 5x^2 + 2x^2 – 9x + x – 7 + 4$@$4x^3 – 6x^2 – 3x^3 + 3x^2 + x^2 – 9x + 3x + 6 – 3$@$4x^3 – 2x^3 + 3x^2 – 5x^2 – 8x + 6x + 4 – 1$@1000

70The descending order of $4x^2 – 9x^3 + 3x^2 – 9x^4 + 3x^3 – 9x^2 + 6x – 3x + 5 – 3$ is @ $– 9x^4 + 6x^3 – 2x^2 + 3x + 2$@ $– 9x^4 – 6x^3 + 2x^2 – 3x + 2$@ $– 9x^4 – 6x^3 – 2x^2 + 3x + 2$@ $– 9x^4 + 6x^3 – 2x^2 + 3x – 2$ @0010

71If $\frac{7}{5}x^3 + \frac{3}{4}x^3 + \frac{7}{2}x^3 + \frac{9}{3}x^3$ is added to $\frac{9x^3}{60}$, then the result is@ – $6x^3$@ $6x^3$ @ $60x^3$ @ $16x^3$ @0100

72If 2x – 3x + 5x = P, Q = – 8x + 3x + 9x and R = – 8x – 6x – 7x, then (P + Q) – R is@27x@28x@29x@26x@0010

73If $A = – 3x^3 – 2x^3 + 4x^2 – 2x^2$, $B = – 3x^2 + 5x^2 – 8x + 3x$ and C = 2x – 9x – 7 + 8,then A + B + C in simplified form is@– $5x^3 + 4x^2 – 12x + 1$@$5x^3 – 3x^2 – 12x + 1$@– $5x^3 – 4x^2$– 12x – 1@$5x^3 + 3x^2 + 12x + 1$@1000

74.If $4x^3y^2 + 3x^2y^3 - 8x^2y^5$ is added $-9x^2y^3 + 6x^2y^5 - 9x^3y^4$, then the result is@$4x^3y^2 + 5x^2y^3 - 2x^2y^5 - 9x^3y^4$@ $4x^3y^2 - 6x^2y^3 - 2x^2y^5 - 9x^3y^4$@ $4x^3y^2 - 6x^2y^3 + 2x^2y^5 - 9x^3y^4$@ $-4x^2y^2 - 6x^2y^3 - 2y^2y^5 - 9x^3y^4$@0100

75.If $0.5x^3 + 1.85x^3 + 2.96x^3 - 4.71x^3$ is added to $(1.25x^4 - 2.5x^5 + 3.6x^4 - 4.71x$@, then the result is@$0.6x^3 + 2.36x^4$@$-0.6x^3 - 2.36x^4$@$0.6x^3 - 2.36x^4$@$-0.6x^3 + 2.36x^4$@0010

76.If $B = -9x^2 + 3x - 7$, then the additive inverse of B is@$9x^2 - 3x - 7$@$9x^2 - 3x + 7$@$9x^2 - 3x - 7$@$-9x^2 + 3x + 7$@0100

77.If A = $\frac{-3x^2}{4} + \frac{2}{3}x + 7$ and B = $\frac{1}{4}x^2 - \frac{1}{3}x + 8$, then A – B is@$x^2 - x + 1$@$-x^2 - x - 1$@$-x^2 + x - 1$@$x^2 + x + 1$@0010

78.If $P = 2x^3 - 3x^2 - 5x + 6$ and Q = $\frac{1}{3}x^3 - \frac{3}{4}x^2 - \frac{5}{2}x + \frac{7}{3}$, then Q – P is@ $\frac{5x^3}{3} + \frac{9x^2}{4} + \frac{5x}{2} - \frac{11}{3}$@ $\frac{-5x^3}{3} - \frac{9x^2}{4} + \frac{5x}{2} - \frac{11}{3}$@ $\frac{-5x^3}{3} - \frac{9x^2}{4} - \frac{5x}{2} - \frac{11}{3}$@ $\frac{5x^3}{3} + \frac{9x^2}{4} + \frac{5x}{2} - \frac{11}{3}$@0100

79.If $A = -\frac{3}{2}x^3 - \frac{9}{7}x^2 + \frac{6x}{7} + 2$ and A + B = 0, then polynomial B is@ $\frac{-3x^3}{2} - \frac{9}{2}x^2 + \frac{6x}{7} + 2$@ $\frac{3x^3}{2} + \frac{9}{2}x^2 + \frac{6x}{7} + 2$@ $\frac{-3x^3}{2} - \frac{9}{2}x^2 - 6x - 2$@ $\frac{3x^3}{2} + \frac{9}{7}x^2 - \frac{6x}{7} - 2$@0001

80.If $A = 2x^3 - 9x^2 - 6x + 7$ and $A + B = 5x^3 - 6x^2 - 8x + 9$, then the polynomial (A + @ – A is@$3x^3 - 3x^2 - 2x + 2$@$3x^3 + 3x^2 - 2x + 2$@$3x^3 + 3x^2 + 2x + 2$@$-3x^3 - 3x^2 - 2x + 2$@0100

81.If $A = 4x^3 - 9x^2 - 9x - 8$ and $A - B = -2x^3 - 8x^2 - 6x - 2$, then the polynomial B = A – (A – @ is@ $6x^3 - x^2 - 3x - 6$@$6x^3 + x^2 + 3x + 6$@$6x^3 + x^2 + 3x - 6$@$-6x^3 - x^2 3x - 6$@1000

82Given $A = 2x^3 - 3x^2 + 6x + 7$ and $B = 4x^3 - 9x^2 - 3x + 7$, If C, D are additive inverses of A and B, then D – C is@ $-2x^3 + 6x^2 + 9x$@ $-2x^3 + 5x^2 + 9x$@ $-2x^3 - 6x^2 + 9x$@ $-2x^3 - 6x^2 - 9x$@1000

83.If $A - B = 2x^3 - 3x^2 + 8x - 7$ and $B = 5x^3 - 9x^2 + 6x - 8$, where A = (A – @ + B, then the polynomial A is@ $7x^3 - 12x^2 + 14x + 18$@ $7x^3 - 12x^2 + 14x - 15$@ $7x^3 - 12x^2 - 14x + 15$@ $-7x^3 + 12x^2 - 14x - 15$@0100

84Given $C = \frac{-5}{6}x^2 - \frac{7}{6}x + \frac{3}{2}$ and C + A= 0.If $B = \frac{x^2}{6} - \frac{1}{6}x + \frac{1}{2}$ is added to A, then the result is@ $x^2 - x + 1$@$-x^2 - x - 1$@$x^2 + x - 1$ @$x^2 - x + 1$@0010

85.If $A = 7x^3 - 2x^2 - 9x + 6$, $B = 2x^3 - 8x^2 + 3x - 5$, $C = 2x^3 - 4x^2 - 8x + 7$, and $D = -3x^3 - 5x^2 + 6x + 7$, then (A – @ – (B – @ is@$5x^2 - 2x - 11$@$5x^2 + 2x + 11$@$5x^2 - 2x + 11$@$-5x^2 - 2x - 11$@0100

86.The value of (3p – @3p + 5 is =_____@ $9p^2 - 12p + 5$@$9p^2 + 12p - 5$@ $4p^2 + 12p - 5$@$9p^2 - 12p - 5$@0001

87.The value of (t/2+6)(t/3–@ is =_____@ $\frac{t^3}{4} + \frac{3t^2}{2} - 12$@ $\frac{t^4}{4} + \frac{3t}{2} - 18$@ $\frac{t^3}{4} - \frac{3t^2}{2} + 18$@ $\frac{t^3}{4} + \frac{3t^2}{2} - 18$@0100

88. The value of $(497)^2$ is ____ (using the indentity)@247006@247009@257006@2578009@0100

89The expansion of is $\left(\frac{1}{2}x^2y+\frac{1}{3xy^2}\right)^2$ _____@ $\frac{1}{4}x^4y-\frac{x}{3y}+\frac{1}{9x^2y^4}$@ $\frac{1}{4}x^4y^2+\frac{x}{3y}+\frac{1}{9x^2y^4}$@ $\frac{1}{4}x^4y^2-\frac{x}{3y}-\frac{1}{9x^2y^4}$@ $x^4y^2+\frac{1}{xy}-\frac{1}{9x^2y^4}$@0100

90The expanssion of $(3.2d–5f)^2$ is _____@$10.24d^2+32df+25f^2$@$10.24d^2–25f^2+32df$@$10.24d^2–32df+25f^2$@$10.24d^2–32df–25f^2$@0010

91.Without actual multiplication, the value of (1001×1007) is =_____@10008007@1080007@10080007@1008007@0001

92.Without actual multiplication, the value of (79.01×79.0@+2×79.01×20.99+(20.99×20.99) is =_____@10009@1000.05@10000@10007@0010

93.If (4x – 3 – 2x + 7)(– 3x – 4 + 5x + @is simplified, then the answer is _@$4x^2 + 2x – 12$@$14x^2 – 22x + 12$@ $4x^2 + 2x + 12$@– $14x^2 – 2x – 12$@1000

94If (x + 7)(x + @ + (x – @(x + 5) is simplified , then the answer is _____ @ $2x^2 + 13x + 11$@ $2x^2 – 13x + 11$@ $2x^2 – 13x – 11$@ $– 2x^2 – 13x – 11$@1000

95.$(12x^3+@^2+(6x^3–@^2=$_____@ $180x^6 –12x^3+10$@ $180x^6 +12x^3+10$@ $180x^6 – 12x^3–10$@ $180x^6 +12x^3–10$@1000

96.If $A= 100^2+100(5+@+5×3$ and $B= 100^2–100(8+@+8×3$, then A+B=_____@ 19735@19736@19739@19732@0010

97.For the product $\left(\frac{3}{5}p+\frac{1}{3}\right)\left(\frac{3}{5}p-\frac{1}{3}\right)$ is the value obtained by using the identity is _____@ $\frac{9p^2}{25}+\frac{1}{9}$@ $\frac{1}{9}-\frac{9p^2}{25}$@ $\frac{9p^2}{25}-\frac{1}{9}$@ $\frac{3p^2}{5}-\frac{1}{3}$@0010

98.Using the identity the value obtained from the product 25.4×24.6 is@62.84@624.84@642.84@264.84@0100

99.Using the identity (a+b)(a–b) = $a^2– b^2$, the value obtained from the product (2/5+x)(2/5–x)(4/25+x@ is ____@ $\frac{16}{625}-x^4$ @ $\frac{16}{625}+x^4$ @ $x^4-\frac{16}{625}$@ $x^4+\frac{16}{625}$@1000

100.If (x – 3y)(x + 3y)($x^2 + 9y$@ is simplified, then the answer is _____@ $x^4 + 81y^4$@ – $81y^4 + x^4$@$x^4 – 81y^4$@– $x^4 – 81y^4$@0010