

**Module 1: Integers & Bracket Operations
(BODMAS / PEMDAS)**

- $(-12) - [(-8) - \{-15 - (6 - 12 - 4)\}]$
a) -9 b) -11 c) -15
d) 7 e) None of these
- $\{24 \div (-4)\} \div (-3) \div \{(-36) \div (-9)\}$
a) $\frac{1}{2}$ b) 2 c) $-\frac{1}{2}$
d) -2 e) None of these
- $15 - [6 + \{12 - (8 - \overline{5 - 2})\}]$
a) 2 b) 4 c) 6
d) 8 e) None of these
- $(-5) \times [(-2) + \{-3 \times (4 - 7)\}]$
a) -35 b) 35 c) -25
d) 25 e) None of these
- $[84 \div (-12)] \div [(-28) \div 4]$
a) 1 b) -1 c) 49
d) -49 e) None of these
- $45 - [38 - \{60 \div 3 - (6 - 9 \div 3)\}]$
a) 24 b) 37 c) 18
d) 42 e) None of these
- $(-18) + [(-4) \times \{(-2) - (8 - 11)\}]$
a) -22 b) -14 c) 22
d) -26 e) None of these
- $\{(-48) \div 6\} \times \{(-15) \div (-3)\}$
a) -40 b) 40 c) -24
d) 24 e) None of these
- $100 \div [20 - \{12 - (10 - 8 \div 2)\}]$
a) 7.14 b) 10 c) 5
d) 20 e) None of these
- $(-3) \times [(-4) + \{-8 \div (-2)\}]$
a) 0 b) 24 c) -24
d) 12 e) None of these
- $25 - 2[5 + \{3 \times (2 - 5)\}]$

- a) 33 b) 17 c) 29
d) 21 e) None of these
- $[(-72) \div (-8)] - [(-36) \div 9]$
a) 13 b) 5 c) -13
d) -5 e) None of these
- $16 - [14 - \{12 - (10 - \overline{8 - 6})\}]$
a) 10 b) 12 c) 8
d) 14 e) None of these
- $(-100) \div [(-10) \times \{(-2) - (-3)\}]$
a) 10 b) -10 c) 100
d) -100 e) None of these
- $\{(-36) \div 12\} \div \{(-15) \div 5\}$
a) 1 b) -1 c) 9
d) -9 e) None of these
- $50 - [20 + \{15 - (10 - 5)\}]$
a) 20 b) 30 c) 25
d) 15 e) None of these
- $(-8) \times [(-3) - \{(-4) + 6\}]$
a) 40 b) -40 c) 24
d) -24 e) None of these
- $[120 \div (-10)] \div [(-24) \div (-2)]$
a) -1 b) 1 c) -144
d) 144 e) None of these
- $36 - [18 - \{14 - (15 - 4 \times 2)\}]$
a) 25 b) 29 c) 21
d) 31 e) None of these
- $\{(-60) \div (-5)\} - \{(-48) \div 4\}$
a) 24 b) 0 c) -24
d) 12 e) None of these

Module 2: Fractions & Mixed Numbers

- $2\frac{1}{2} + 3\frac{1}{4} - 1\frac{1}{2}$
a) $4\frac{1}{4}$ b) $4\frac{1}{2}$ c) $5\frac{1}{4}$
d) $3\frac{3}{4}$ e) None of these

22. $5\frac{1}{3} \div 1\frac{1}{3} \times 2\frac{1}{2}$

- a) 10 b) 8 c) 12
d) 6 e) None of these

23. $4\frac{2}{5} - [1\frac{1}{2} + \{2\frac{1}{5} - (\frac{1}{2} - \frac{1}{5})\}]$

- a) 1 b) $1\frac{1}{2}$ c) 2
d) $\frac{1}{2}$ e) None of these

24. $\frac{3}{4} + \frac{5}{6} \div \frac{2}{3} \times \frac{4}{5}$

- a) $1\frac{3}{4}$ b) $2\frac{1}{4}$
c) $1\frac{1}{2}$ d) 2 e) None of these

25. $3\frac{1}{2} \div (1\frac{1}{4} + 1\frac{1}{2})$

- a) $1\frac{3}{11}$ b) $1\frac{2}{11}$
c) $2\frac{1}{11}$ d) $1\frac{4}{11}$ e) None of these

26. $7\frac{1}{2} - [2\frac{1}{2} + \{1\frac{1}{4} - (\frac{1}{2} - \frac{1}{4})\}]$

- a) 4 b) $4\frac{1}{2}$
c) $3\frac{1}{2}$ d) 5 e) None of these

27. $\frac{2}{3} \times \frac{3}{4} \div \frac{1}{2} + \frac{1}{3}$

- a) $1\frac{1}{3}$ b) 1 c) $1\frac{2}{3}$
d) $\frac{2}{3}$ e) None of these

28. $6\frac{2}{3} \div 2\frac{2}{9}$

- a) 3 b) $2\frac{1}{3}$ c) $3\frac{1}{3}$
d) 4 e) None of these

29. $1\frac{4}{5} + 2\frac{1}{2} - 3\frac{1}{10}$

- a) $1\frac{1}{5}$ b) $1\frac{2}{5}$ c) 1
d) $1\frac{3}{10}$ e) None of these

30. $\frac{5}{8} \div \frac{3}{4}$ of $\frac{5}{6}$

- a) 1 b) $\frac{25}{32}$ c) $1\frac{1}{4}$

d) $\frac{8}{15}$

e) None of these

31. $4\frac{1}{6} - 2\frac{1}{3} + 1\frac{1}{2}$

- a) $3\frac{1}{3}$ b) 3 c) $2\frac{2}{3}$
d) $3\frac{1}{6}$ e) None of these

32. $(\frac{3}{5} + \frac{1}{2}) \div (\frac{3}{5} - \frac{1}{2})$

- a) 11 b) 10 c) 9
d) 12 e) None of these

33. $8\frac{1}{3} \times 1\frac{1}{5} \div 2\frac{1}{2}$

- a) 4 b) 5 c) $3\frac{1}{2}$
d) $4\frac{1}{2}$ e) None of these

34. $3\frac{3}{4} \div 1\frac{7}{8}$

- a) 2 b) $2\frac{1}{2}$ c) $1\frac{1}{2}$
d) 3 e) None of these

35. $2\frac{1}{3} + 3\frac{1}{6} - 4\frac{1}{2}$

- a) 1 b) $\frac{1}{2}$ c) $1\frac{1}{2}$
d) 0 e) None of these

36. $\frac{7}{9} \div (\frac{5}{6} - \frac{1}{3})$

- a) $1\frac{5}{9}$ b) $1\frac{4}{9}$ c) $1\frac{2}{9}$
d) 2 e) None of these

37. $5\frac{1}{2} - 2\frac{1}{4} + 3\frac{3}{4}$

- a) 7 b) $6\frac{1}{2}$ c) $7\frac{1}{2}$
d) 8 e) None of these

38. $(1\frac{1}{2} + 2\frac{2}{3}) \times \frac{3}{5}$

- a) $2\frac{1}{2}$ b) 2 c) 3
d) $2\frac{1}{3}$ e) None of these

39. $9\frac{1}{4} - (3\frac{1}{2} + 2\frac{3}{4})$

- a) 3 b) $3\frac{1}{2}$ c) $2\frac{3}{4}$
d) 4 e) None of these

40. $\frac{4}{7} \times 2\frac{5}{8} \div 1\frac{1}{2}$

- a) 1 b) $1\frac{1}{2}$ c) $\frac{3}{4}$
d) 2 e) None of these

Module 3: Continued Fractions & Complex Expressions

41. $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{2}}}$

- a) $1\frac{3}{5}$ b) $1\frac{2}{5}$ c) $1\frac{4}{5}$
d) $2\frac{1}{5}$ e) None of these

42. $1 \div \left[1 + 1 \div \left\{ 1 + 1 \div \left(1 + \frac{1}{2} \right) \right\} \right]$

- a) $\frac{5}{8}$ b) $\frac{3}{8}$ c) $\frac{5}{3}$
d) $\frac{8}{5}$ e) None of these

43. $2 - \frac{1}{2 - \frac{1}{2 - \frac{1}{2}}}$

- a) $1\frac{1}{3}$ b) $1\frac{2}{3}$ c) $1\frac{1}{2}$
d) $2\frac{1}{3}$ e) None of these

44. $\frac{1}{3 + \frac{1}{1 + \frac{1}{2 + \frac{1}{4}}}}$

- a) $\frac{13}{43}$ b) $\frac{9}{43}$ c) $\frac{12}{35}$
d) $\frac{11}{43}$ e) None of these

45. $1 + \frac{2}{1 + \frac{3}{1 + \frac{4}{5}}}$

- a) $1\frac{7}{8}$ b) $2\frac{1}{8}$ c) $1\frac{5}{8}$
d) $2\frac{3}{8}$ e) None of these

46. $3 + \frac{1}{3 + \frac{1}{3 + \frac{1}{3}}}$

- a) $3\frac{10}{33}$ b) $3\frac{9}{31}$ c) $3\frac{11}{33}$

- d) $3\frac{8}{33}$ e) None of these

47. $\frac{1}{2 + \frac{1}{2 + \frac{1}{2 - \frac{1}{2}}}}$

- a) $\frac{8}{19}$ b) $\frac{7}{19}$ c) $\frac{9}{19}$
d) $\frac{6}{19}$ e) None of these

48. $1 - \frac{1}{1 + \frac{1}{2 - \frac{1}{3}}}$

- a) $\frac{3}{8}$ b) $\frac{5}{8}$ c) $\frac{1}{4}$
d) $\frac{1}{2}$ e) None of these

49. $2 + \frac{1}{3 + \frac{1}{1 + \frac{1}{4}}}$

- a) $2\frac{5}{19}$ b) $2\frac{4}{19}$ c) $2\frac{6}{19}$
d) $2\frac{3}{19}$ e) None of these

50. $\frac{1}{1 + \frac{1}{1 + \frac{1}{1 + 1}}}$

- a) $\frac{3}{5}$ b) $\frac{2}{5}$ c) $\frac{4}{5}$
d) $\frac{5}{3}$ e) None of these

51. $4 - \frac{5}{1 + \frac{1}{3 + \frac{1}{2 + \frac{1}{4}}}}$

- a) $\frac{1}{8}$ b) $\frac{3}{8}$ c) $\frac{1}{4}$
d) $\frac{1}{2}$ e) None of these

52. $1 + \frac{1}{2 + \frac{1}{3 + \frac{1}{4}}}$

- a) $1\frac{13}{30}$ b) $1\frac{11}{30}$ c) $1\frac{7}{30}$
d) $1\frac{17}{30}$ e) None of these

53. $\frac{2}{2 + \frac{2}{3 + \frac{2}{3 + \frac{2}{3}}}}$

- a) $\frac{11}{14}$ b) $\frac{9}{14}$ c) $\frac{5}{7}$

d) $\frac{4}{7}$ e) None of these

$$54.3 - \frac{1}{1 + \frac{2}{3 + \frac{1}{2}}}$$

a) $2\frac{3}{11}$ b) $2\frac{4}{11}$ c) $2\frac{2}{11}$
d) $2\frac{5}{11}$ e) None of these

$$55.1 + \frac{1}{1 + \frac{2}{1 + \frac{3}{4}}}$$

a) $1\frac{7}{15}$ b) $1\frac{8}{15}$ c) $1\frac{4}{15}$
d) $1\frac{6}{15}$ e) None of these

$$56. \frac{1}{4 + \frac{1}{4 + \frac{1}{4}}}$$

a) $\frac{17}{72}$ b) $\frac{15}{72}$ c) $\frac{19}{72}$
d) $\frac{13}{72}$ e) None of these

$$57.2 + \frac{3}{2 + \frac{3}{2 + 3}}$$

a) $3\frac{1}{13}$ b) $3\frac{2}{13}$ c) $2\frac{11}{13}$
d) $3\frac{3}{13}$ e) None of these

$$58. \frac{1}{1 + \frac{1}{2 + \frac{1}{3 + \frac{1}{2}}}}$$

a) $\frac{7}{10}$ b) $\frac{10}{17}$ c) $\frac{7}{17}$
d) $\frac{10}{23}$ e) None of these

$$59.5 - \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + 1}}}$$

a) $4\frac{2}{5}$ b) $4\frac{3}{5}$ c) $4\frac{1}{5}$
d) $4\frac{4}{5}$ e) None of these

$$60.1 + \frac{1}{3 + \frac{1}{2 + \frac{1}{1 + 1}}}$$

a) $1\frac{5}{17}$ b) $1\frac{4}{17}$ c) $1\frac{6}{17}$
d) $1\frac{7}{17}$ e) None of these

Module 4: 'Of' Operations & Multi-Level Division

$$61. \frac{3}{4} \div \frac{3}{4} \text{ of } \frac{3}{4} \times \frac{3}{4}$$

a) 1 b) $1\frac{1}{3}$ c) $\frac{9}{16}$
d) $\frac{16}{9}$ e) None of these

$$62. \frac{1}{2} \div \frac{1}{2} \text{ of } \frac{1}{2}$$

a) 2 b) $\frac{1}{2}$ c) 1
d) 4 e) None of these

$$63. \left(\frac{1}{2} \div \frac{1}{2}\right) \text{ of } \frac{1}{2}$$

a) $\frac{1}{2}$ b) 1 c) 2
d) $\frac{1}{4}$ e) None of these

$$64. \frac{1}{5} \div \frac{1}{5} \text{ of } \frac{1}{5}$$

a) 25 b) 1 c) 5
d) $\frac{1}{25}$ e) None of these

$$65. 54 \div 6 \div 3$$

a) 3 b) 27 c) 1
d) 9 e) None of these

$$66. 72 \div 12 \div 3 \div 2$$

a) 1 b) 4 c) 36
d) 12 e) None of these

$$67. \frac{2}{3} \text{ of } 4\frac{1}{2} \div 1\frac{1}{2}$$

a) 2 b) 3 c) $1\frac{1}{2}$
d) 4 e) None of these

$$68. 100 \div 5 \text{ of } 4 + 2$$

a) 7 b) 82 c) 10
d) 5 e) None of these

$$69. 48 \div 12 \text{ of } 2 + 3 \times 2$$

a) 8 b) 14 c) 10
d) 4 e) None of these

70. $\frac{4}{5}$ of $25 \div 5 \times 2$

- a) 8 b) 2 c) 10
d) 4 e) None of these

71. $36 \div 4$ of 3×2

- a) 6 b) 24 c) 18
d) 12 e) None of these

72. $\frac{\frac{2}{3} \div \frac{2}{3}}{\frac{2}{3} \text{ of } \frac{2}{3} \div \frac{2}{3}}$

- a) $2\frac{1}{4}$ b) 1 c) $1\frac{1}{2}$
d) $\frac{4}{9}$ e) None of these

73. $120 \div 10 \div 4 \div 3$

- a) 1 b) 10 c) 144
d) 12 e) None of these

74. $\frac{5}{6}$ of $36 \div 10 + 2$

- a) 5 b) 3 c) 8
d) 6 e) None of these

75. $64 \div 8$ of 2×4

- a) 16 b) 64 c) 4
d) 32 e) None of these

76. $\frac{3}{5} \div \frac{3}{5}$ of $\frac{1}{5}$

- a) 5 b) $\frac{1}{5}$ c) 1
d) 25 e) None of these

77. $90 \div 15 \div 3 \times 2$

- a) 4 b) 1 c) 18
d) 36 e) None of these

78. 16 of $4 \div 8 + 3$

- a) 11 b) 10 c) 8
d) 12 e) None of these

79. $\frac{7}{8}$ of $64 \div 14$

- a) 4 b) 8 c) 2
d) 7 e) None of these

80. $100 \div 10$ of 10×10

- a) 10 b) 100 c) 1
d) 1000 e) None of these

Module 5: Algebraic Identities & Simplification Shortcuts

81. $\frac{0.87 \times 0.87 \times 0.87 + 0.13 \times 0.13 \times 0.13}{0.87 \times 0.87 - 0.87 \times 0.13 + 0.13 \times 0.13}$

- a) 1 b) 0.74 c) 0.87
d) 0.13 e) None of these

82. $\frac{0.67 \times 0.67 \times 0.67 - 0.33 \times 0.33 \times 0.33}{0.67 \times 0.67 + 0.67 \times 0.33 + 0.33 \times 0.33}$

- a) 0.34 b) 1 c) 0.67
d) 0.33 e) None of these

83. $\frac{(2.3)^3 - 0.027}{(2.3)^2 + 0.69 + 0.09}$

- a) 2.0 b) 2.6 c) 2.3
d) 1.7 e) None of these

84. $\frac{(0.96)^3 - (0.1)^3}{(0.96)^2 + 0.096 + 0.01}$

- a) 0.86 b) 1.06 c) 0.96
d) 0.85 e) None of these

85. $\frac{(854+276)^2 - (854-276)^2}{854 \times 276}$

- a) 4 b) 2 c) 1130
d) 578 e) None of these

86. $\frac{(759+241)^2 + (759-241)^2}{(759 \times 759) + (241 \times 241)}$

- a) 2 b) 4 c) 1000
d) 518 e) None of these

87. $999 \frac{998}{999} \times 999$

- a) 998999 b) 999998 c) 989999
d) 998998 e) None of these

88. $99 \frac{95}{99} \times 99$

- a) 9896 b) 9801 c) 9995
d) 9895 e) None of these

89. $\frac{1}{5} + 999 \frac{494}{495} \times 99$

- a) 99000 b) 99900 c) 9900
d) 100000 e) None of these

90. $\frac{1}{7} + 99 \frac{62}{63} \times 9$

- a) 900 b) 1000 c) 990
d) 890 e) None of these

91. $\frac{(1.5)^3 + (4.7)^3 + (3.8)^3 - 3 \times 1.5 \times 4.7 \times 3.8}{(1.5)^2 + (4.7)^2 + (3.8)^2 - 1.5 \times 4.7 - 4.7 \times 3.8 - 3.8 \times 1.5}$

- a) 10 b) 1 c) 0
d) 5 e) None of these

92. $\frac{0.05 \times 0.05 + 0.41 \times 0.41 + 0.073 \times 0.073}{0.005 \times 0.005 + 0.041 \times 0.041 + 0.0073 \times 0.0073}$

- a) 100 b) 10 c) 1000
d) 0.1 e) None of these

93. $\sqrt{\frac{0.09 \times 0.09 + 0.25 \times 0.25}{0.009 \times 0.009 + 0.025 \times 0.025}}$

- a) 10 b) 100 c) 1
d) 0.1 e) None of these

Answer: a

94. $\frac{(0.13)^2 + (0.21)^2}{(0.013)^2 + (0.021)^2}$

- a) 100 b) 10 c) 1000
d) 1 e) None of these

95. $\left(1 - \frac{1}{2}\right) \left(1 - \frac{1}{3}\right) \left(1 - \frac{1}{4}\right) \dots \left(1 - \frac{1}{n}\right)$

- a) $\frac{1}{n}$ b) $\frac{2}{n}$ c) $\frac{n-1}{n}$
d) $\frac{2}{n(n+1)}$ e) None of these

96. $\left(1 + \frac{1}{2}\right) \left(1 + \frac{1}{3}\right) \left(1 + \frac{1}{4}\right) \dots \left(1 + \frac{1}{n}\right)$

- a) $\frac{n+1}{2}$ b) $\frac{n}{2}$ c) $n + 1$
d) $\frac{n(n+1)}{2}$ e) None of these

97. $\frac{1}{1 \times 2} + \frac{1}{2 \times 3} + \frac{1}{3 \times 4} + \dots + \frac{1}{99 \times 100}$

- a) $\frac{99}{100}$ b) $\frac{1}{100}$ c) $\frac{98}{100}$

98. $\frac{1}{2 \times 5} + \frac{1}{5 \times 8} + \frac{1}{8 \times 11} + \frac{1}{11 \times 14} + \frac{1}{14 \times 17}$

- a) $\frac{5}{34}$ b) $\frac{3}{34}$ c) $\frac{7}{34}$
d) $\frac{1}{17}$ e) None of these

99. $\frac{(a-b)^2 + 4ab}{a+b}$

- a) $a + b$ b) $a - b$ c) 1
d) $4ab$ e) None of these

100. $\frac{(x+y)^3 - (x-y)^3}{2y}$

- a) $3x^2 + y^2$ b) $x^2 + 3y^2$
c) $3x^2 - y^2$ d) $x^2 - 3y^2$
e) None of these

