ELITE IIT

Important Formulas

1. Dividend = Divisor x Quotient + Remainder
2. Divisor = $\frac{Dividend\ -Remainder}{Quotient}$
3. Quotient = $\frac{Dividend\ -Remainder}{Divisor}$
4. LCM of Fraction = $\frac{LCM\ of\ Numerator}{LCM\ of\ Denominator}$
5. HCF of Fraction = $\frac{HCF\ of\ Numerator}{LCM\ of\ Denominator}$
6. HCF X LCM = Product of Numbers
7. V – Viniculum

   B – Bracket

   O – Of

   D – Division

   M – Multiplication

   A – Addition

   S – Subtraction
8. Average = $\frac{Sum\ of\ Observation}{No\ of\ Observations}$
9. Average of first n natural nos. = $(\frac{n+1}{2})$
10. Average of first n even nos. = (n+1)
11. Average of first n odd nos. = n
12. Average of consecutive numbers = $\frac{First\ No.+Last\ No.}{2}$
13. Average of n multiples of any number = $\frac{Number\ \ X\ (n+1)}{2}$
14. Ratio : a:b
15. $a^2 : b^2$ is duplicate ratio of a : b
16. $a^3 : b^3$ is duplicate ratio of a : b
17. $\sqrt{a} : \sqrt{b}$ is subduplicate ratio of a : b
18. $\sqrt[3]{a} : \sqrt[3]{b}$ is subduplicate ratio of a : b
19. Proportion : a:b::c:d

20. Mean proportional between a and b is $\sqrt{ab}$
21. Rate % = $\frac{Result}{Original\ \ No.}$ x 100
22. Increased % = ($\frac{Increment}{Original\ \ No.}$ x 100) %
23. Decreased % = ($\frac{Decrement}{Original\ \ No.}$ x 100) %
24. Profit = S. P. – C.P
25. Loss = C. P. – S.P
26. Profit % = $\frac{SP-CP}{CP}$ x 100
27. CP = $\frac{SP}{(1-\frac{Profit\ \ \%}{100})}$
28. Loss % = $\frac{CP-SP}{CP}$ x 100
29. CP = $\frac{SP}{(1-\frac{Loss\ \%}{100})}$
30. SJ = $\frac{P\ X\ R\ X\ T}{100}$
31. Amount = Principal + Interest
32. Speed = $\frac{Distance}{Time}$
33. Average Speed = $\frac{Total\ \ Distance\ \ travelled}{Total\ \ time\ \ taken}$
34. To convert speed in m/s from km/h multiply it with 5/18
35. To convert speed in km/h from m/s multiply it with 18/5
36. + x – = –
37. – x + = –
38. – x – = +
39. + x + = +
40. Acute angle < 90°
41. Right angle = 90°
42. Obtuse angle > 90° but <180°
43. Straight angle = 180°
44. Reflex Angle > 180° but < 360°

45. Complementary angles = 90°
46. Supplementary angles = 180°
47. Sum of all angles in triangle = 180°
48. Pythagoras Theorem
    $(\text{Hypotenuse})^2 = (\text{perpendicular})^2 + (\text{Base})^2$
49. Area of Rectangle = Length X Breadth
50. Perimeter of Rectangle = 2(Length + Breadth)
51. Diagonal of Rectangle = $\sqrt{(length)^2 + (Breadth)^2}$
52. Area of Square = $(\text{Side})^2$
53. Perimeter of square = 4 x Side
54. Diagonal of Square = $\sqrt{2}$ x Side
55. Area of Right angled Triangle = ½ x Length x Breadth
    = ½ x Base x Height
56. Volume of a cube = $(\text{Edge})^3$
57. Whole Surface Area of Cube = 6 x a^2
58. Volume of a Cuboid = l x b x h
59. Whole Surface area of Cuboid = 2 (lb + bh +hl)
60. Diagonal of Cuboid = $\sqrt{l^2 + b^2 + h^2}$
61. Diagonal of cube = a $\sqrt{3}$
62. $F = \frac{9}{5} C + 32$ → Conversion of ^oC to ^oF
63. $F = \frac{5}{9} (F - 32)$ → Conversion of ^oF to ^oC
64. Length → meter
65. Weight → Gram
66. Time → Second
67. Area → Meter X Meter
68. Volume → Meter X Meter X Meter
69. Currency → Rupee
70. Liquid → Litre