

PRACTICE QUESTIONS FOR TESCOM RECRUITMENT

MATHEMATICS

Arithmetic and Number Theory

1. What is the sum of the first 50 natural numbers?
2. Simplify $(72 \div 8 + 9 \times 3 - 6)$.
3. Find the LCM of 12, 15, and 18.
4. What is the greatest common divisor of 56 and 98?
5. If $(a + b = 15)$ and $(a - b = 3)$, find the values of (a) and (b) .
6. What is the value of $(7^2 - 5 \times 3 + 4)$?
7. Simplify $(\frac{3}{4} + \frac{5}{6})$.
8. Convert 0.75 to a fraction.
9. Calculate the square root of 144.
10. What is $(10^3 \div 10^2)$?
11. If $(x = 3)$, evaluate $(2x^2 - 4x + 6)$.
12. What is the prime factorization of 60?
13. Solve for (x) : $(5x + 2 = 17)$.
14. What is the value of $(9! \div 7!)$?
15. Find the sum of the interior angles of a pentagon.

Algebra

16. Simplify the expression $(3x + 4x - 5 + 2)$.
17. Solve for (y) in $(2y - 3 = 9)$.
18. If $(2x + 3y = 12)$ and $(x - y = 2)$, find the values of (x) and (y) .
19. Factorize $(x^2 - 5x + 6)$.
20. Solve the quadratic equation $(x^2 - 4x - 12 = 0)$.
21. Expand $((x + 2)(x - 3))$.

22. If $(y = 3x + 2)$, find (y) when $(x = 4)$.
23. Simplify $(\frac{6x^2y}{3xy^2})$.
24. If $(a^2 = 25)$, what are the possible values of (a) ?
25. Solve for (z) in the equation $(4z - 7 = 5z + 2)$.

Geometry

26. Find the area of a triangle with base 10 cm and height 5 cm.
27. What is the perimeter of a rectangle with length 8 cm and width 5 cm?
28. Calculate the circumference of a circle with a radius of 7 cm.
29. Find the volume of a cube with side length 4 cm.
30. What is the length of the diagonal of a rectangle with sides 6 cm and 8 cm?
31. Calculate the area of a circle with diameter 14 cm.
32. What is the total surface area of a cylinder with radius 3 cm and height 5 cm?
33. Find the measure of each interior angle of a regular hexagon.
34. What is the area of a trapezium with bases 8 cm and 10 cm and height 6 cm?
35. Determine the volume of a sphere with radius 3 cm.

Trigonometry

36. What is $(\sin 30^\circ)$?
37. Find $(\cos 45^\circ)$.
38. Calculate $(\tan 60^\circ)$.
39. If $(\sin \theta = \frac{1}{2})$, find (θ) .
40. What is $(\sec 0^\circ)$?
41. Simplify $(\sin^2 \theta + \cos^2 \theta)$.
42. Solve for (θ) in the equation $(\tan \theta = \sqrt{3})$.
43. What is $(\csc 90^\circ)$?
44. Find the value of $(\cot 45^\circ)$.

45. Calculate $(\sin 90^\circ - \cos 90^\circ)$.

Calculus

46. Differentiate $f(x) = 3x^2 + 4x - 5$.

47. Integrate $\int (2x + 3) \, dx$.

48. Find the second derivative of $f(x) = x^3 - 4x$.

49. Evaluate the limit $\lim_{x \rightarrow 2} \frac{(x^2 - 4)}{(x - 2)}$.

50. Calculate the definite integral $\int_0^2 (3x + 1) \, dx$.

Note: This is not the actual question but avenue for practice.