

MATHEMATICS

1. Solve : $5x - 3 = 17$. Find x

- a) 4
- b) 5
- c) 6
- d) 3

2. A quadrilateral has angles 90° , 80° , 70° .

What is the fourth angle?

- a) 120°
- b) 130°
- c) 110°
- d) 100°

3. A trader marks his goods 20% above cost price and allows a discount of 10%. What is the profit percentage?

- a) 8%
- b) 10%
- c) 12%
- d) 15%

4. If x varies directly with y , and $x = 10$ when $y = 5$, find x when $y = 15$.

- a) 30
- b) 25
- c) 20
- d) 35

5. A cube with a side length of 4 cm has a surface area of :

- a) 48 cm^2
- b) 64 cm^2
- c) 96 cm^2
- d) 128 cm^2

6. Expand $(a + b)^2$

- a) $a^2 + b^2 + 2ab$
- b) $a^2 + b^2 - 2ab$
- c) $a^2 - b^2 + 2ab$
- d) $a^2 + b^2$

7. Simplify : $(2^3)^2 \div 2^4$.

- a) 2^2
- b) 2^3
- c) 2^4
- d) 2^5

8. The square root of 144 is :

- a) 10
- b) 11
- c) 12
- d) 13

9. Factorize: $x^2 - 9$.

- a) $(x+3)(x+3)$
- b) $(x+3)(x-3)$
- c) $x(x-9)$
- d) $x^2 - 3$

10. Which of the following is a rational number?

- a) $\sqrt{2}$
- b) $\sqrt{5}$
- c) $\frac{4}{5}$
- d) π

11. Solve : $\frac{x-2}{3} = 4$. Find x.

- a) 12
- b) 10
- c) 14
- d) 15

12. The diagonal of a square with side length 5 cm is:

- a) 5 cm
- b) $5\sqrt{2}$ cm
- c) 10 cm
- d) $10\sqrt{2}$ cm.

13. If $8x = 64$, find x.

- a) 6
- b) 7

c) 8

d) 9

14. What is $3x^2 - 27$ when $x = 3$?

- a) 0
- b) 9
- c) 27
- d) 18

15. A person reduces his monthly spending from Rs. 5000 to Rs. 4500. What is the percentage decrease ?

- a) 5%
- b) 10%
- c) 12%
- d) 15%

APTITUDE

16. What comes next in the series: 2, 4, 8, 16, ?

- a) 24
- b) 32
- c) 18
- d) 20

17. Find the odd one out : Apple, Banana, Mango, Carrot.

- a) Apple
- b) Banana
- c) Mango
- d) Carrot

18. Choose the correct analogy:

Book : Read :: Pen : ?

- a) Write
- b) Hold
- c) See
- d) Erase

19. Decode the word:

If CAT = 3120, what does DOG = ?

- a) 4157
- b) 4100
- c) 4070
- d) 5080

20. If A is the brother of B and B is the sister of C, how is A related to C ?

- a) Brother
- b) Sister
- c) Father
- d) Uncle

21. A person walks 5 km towards the north, then turns right and walks 3 km. Then he turns right again and walks 5 km. Finally, he turns left and walks 2 km. Where is he now from his starting point ?

- a) 3 km east
- b) 3 km west
- c) 5 km north
- d) 2 km south

22. If 15th August 2022 was a Monday, what day will 15th August 2023 be ?

- a) Monday
- b) Tuesday
- c) Wednesday
- d) Thursday

23. How many corners does a cube have?

- a) 6
- b) 8
- c) 12
- d) 16

24. The angle between the hour hand and the minute hand of a clock at 3:15 is:

- a) 7.5°
- b) 22.5°
- c) 15°
- d) 30°

25. Which diagram best represents the relationship between Birds, Eagles, and Animals ?

- a) Three intersecting circles
- b) Nested circles (Birds inside Animals, Eagles inside Birds)
- c) Separate circles for all three
- d) Birds and Animals intersecting, Eagles separate

26. If $6 \times 4 + 3 = 27$, what is the value of $8 \times 5 + 2$?

- a) 30
- b) 42
- c) 40
- d) 50

**27. Find the missing number in the series :
3, 6, 11, 18 ?**

- a) 27
- b) 25
- c) 29
- d) 23

28. Which of the following Venn diagrams correctly represents the relationship between Engineers, Women, and Teachers?

- a) Intersecting circles with some overlap
- b) Nested circles (Women inside Engineers, Teachers inside Women)
- c) Completely separate circles
- d) Engineers and Teachers intersecting with Women overlapping both

29. A cube has six faces, each of which is painted with a different color. How many distinct ways can you arrange the colors of the cube by rotation?

- a) 24
- b) 30
- c) 12
- d) 720

30. If A is the brother of B, B is the sister of C, and C is the father of D, how is A related to D ?

- a) Uncle
- b) Brother
- c) Father
- d) Cousin

PHYSICS

31. Which of the following best describes the pressure exerted by liquids ?

- a) Increases with depth
- b) Decreases with depth
- c) Uniform at all levels
- d) Independent of depth

32. A rough surface is more likely to cause:

- a) Less friction
- b) More friction
- c) No friction
- d) Uniform friction

33. Sound cannot travel through:

- a) Solid
- b) Liquid
- c) Vacuum
- d) Gas

34. The phenomenon of splitting white light into seven colors is called:

- a) Reflection
- b) Refraction
- c) Dispersion
- d) Absorption

35. Lightning occurs due to the flow of:

- a) Protons
- b) Neutrons
- c) Electrons
- d) Atoms

CHEMISTRY

36. Which material is the best conductor of electricity?

- a) Plastic
- b) Rubber
- c) Copper
- d) Wood

37. Which of the following is not a fossil fuel?

- a) Coal
- b) Petroleum
- c) Natural gas
- d) Hydrogen

38. Combustion of fuels produces:

- a) Carbon dioxide and water
- b) Hydrogen and water
- c) Oxygen and nitrogen
- d) Helium and argon

39. Which flame is the hottest?

- a) Blue flame
- b) Yellow flame
- c) Red flame
- d) Orange flame

40. A bulb glows when an electric current passes through a solution. This shows the solution is:

- a) Conductive
- b) Insulative
- c) Corrosive
- d) Reactive

BIOLOGY

- 41. Which microorganism is used in the production of alcohol?**
- a) Bacteria
 - b) Virus
 - c) Yeast
 - d) Protozoa
- 42. Which is an asexual method of reproduction?**
- a) Budding
 - b) Fertilization
 - c) Pollination
 - d) Fragmentation
- 43. The hormone responsible for secondary sexual characteristics in males is:**
- a) Estrogen
 - b) Testosterone
 - c) Insulin
 - d) Adrenaline
- 44. Malaria is caused by:**
- a) Bacteria
 - b) Virus
 - c) Protozoa
 - d) Fungi

- 45. Adolescents are advised to eat a diet rich in:**

- a) Fats
- b) Vitamins and proteins
- c) Carbohydrates
- d) Sugars

ENGLISH

- 46. Change the narration:**

He said, "I will go to school tomorrow."

- a) He said that he would go to school the next day.
- b) He said that he will go to school tomorrow.
- c) He said that I will go to school tomorrow.
- d) He says he will go to school the next day.

- 47. Identify the part of speech for the underlined word:**

She quickly finished her homework.

- a) Verb
- b) Adjective
- c) Adverb
- d) Noun

- 48. Change the voice:**

The teacher checked the assignments.

- a) The assignments were checked by the teacher.
- b) The assignments were being checked by the teacher.
- c) The assignments are checked by the teacher.
- d) The assignments had been checked by the teacher.

49. Fill in the blank with the correct determiner:

She bought ____ apples from the market.

- a) a few
- b) much
- c) a little
- d) many

50. Choose the correct form of tense:

I ____ (study) for two hours before she called.

- a) studied
- b) had studied
- c) have studied
- d) am studying

51. Fill in the blank with the correct preposition:

He is good ____ mathematics.

- a) at
- b) in
- c) for
- d) of

52. Choose the correct modal:

You ____ take rest as you look tired.

- a) should
- b) will
- c) can
- d) might

53. Identify the error in subject-verb agreement:

Each of the boys ____ playing cricket.

- a) is
- b) are
- c) have
- d) has

54. Combine the sentences using the correct conjunction: He is rich. He is unhappy.

He is rich. He is unhappy.

- a) Although he is rich, he is unhappy.
- b) Because he is rich, he is unhappy.
- c) If he is rich, he is unhappy.
- d) So he is rich, he is unhappy.

55. Identify the type of clause: "I know that she is honest."

- a) Noun clause
- b) Adjective clause
- c) Adverb clause
- d) Main clause

56. Change the narration:

She said, "I am writing a letter."

- a) She said that she was writing a letter.
- b) She said that she is writing a letter.
- c) She says that she was writing a letter.
- d) She said she had written a letter.

57. Identify the preposition: The cat is under the table.

- a) cat
- b) under
- c) table
- d) is

58. Fill in the blank with the correct tense:

By next month, they ____ (finish) the project.

- a) will finish
- b) will have finished
- c) are finishing
- d) have finished

59. Choose the correct modal :

She ____ speak three languages fluently.

- a) can
- b) will
- c) must
- d) shall

60. Complete the sentence with a suitable conjunction:

You can have tea ____ coffee, but not both.

- a) or
- b) and
- c) because
- d) if