

MATHEMATICS

1. The volume of a cone is $\frac{1}{3}\pi r^2 h$. What is the volume of a cone with radius 3 cm and height 9 cm?
 - a) 25.5 cm³
 - b) 81 cm³
 - c) 84 cm³
 - d) 54.85 cm³
2. In a triangle, if one angle is 90° and the other two angles are equal, what type of triangle is it?
 - a) Acute-angled triangle
 - b) Scalene triangle
 - c) Right isosceles triangle
 - d) Equilateral triangle
3. If the mean of five numbers is 20, what is the sum of the numbers?
 - a) 4
 - b) 25
 - c) 100
 - d) 120
4. What is the value of $2^{0.5} \times 2^{2.5}$?
 - a) 2³
 - b) 2²
 - c) 2¹
 - d) 2⁴
5. Which of the following is an irrational number?
 - a) $\frac{3}{4}$
 - b) $\sqrt{2}$
 - c) 0.5
 - d) 2
6. If $x + 3 = 7$, what is the value of x?
 - a) 3
 - b) 4
 - c) 5
 - d) 7
7. What is the sum of the roots of the quadratic equation $2x^2 - 3x + 1 = 0$?
 - a) -1
 - b) $\frac{3}{2}$
 - c) 3
 - d) -3
8. If the mean of five numbers is 20, what is the sum of the numbers?
 - a) 4
 - b) 25
 - c) 100
 - d) 120

9. The sum of the interior angles of a quadrilateral is:

- a) 180°
- b) 360°
- c) 270°
- d) 90°

10. The sum of the angles of a triangle is always equal to:

- a) 180°
- b) 360°
- c) 270°
- d) 90°

11. The median of a data set is the:

- a) Average of all values
- b) Middle value when data is arranged in ascending order
- c) Sum of all values divided by the number of values
- d) Most frequent value

12. What is the area of a circle with radius 7 cm?

(Use $\pi = \frac{22}{7}$)

- a) 154 cm^2
- b) 49 cm^2
- c) 44 cm^2
- d) 22 cm^2

13. The volume of a cylinder is given by the formula $V = \pi r^2 h$. What will be the volume of a cylinder with radius 3 cm and height 5 cm ?

- a) 141.42 cm^3
- b) 130 cm^3
- c) 75.4 cm^3
- d) 45.6 cm^3

14. The decimal expansion of $\frac{1}{7}$ is:

- a) Terminating
- b) Non-terminating but repeating
- c) Non-terminating and non-repeating
- d) A whole number

15. Which of the following is a rational number?

- a) $\sqrt{2}$
- b) π
- c) $\frac{7}{4}$
- d) $\sqrt{3}$

16. Which of the following is a polynomial?

- a) $x^2 + 3x + 1$
- b) $\frac{1}{x} + 2$
- c) $\frac{5}{x^2}$
- d) $\frac{1}{x+1}$

SOCIAL STUDIES

17. The sum of the interior angles of a polygon

with n sides is given by:

- a) $(n-2) \times 180^\circ$
- b) $n \times 180^\circ$
- c) 180°
- d) $n \times 360^\circ$

18. In a cyclic quadrilateral, the sum of opposite angles is always equal to:

- a) 0°
- b) 90°
- c) 180°
- d) 360°

19. The mode of the data set 1, 2, 3, 3, 4, 4, 4, 5 is:

- a) 1
- b) 2
- c) 4
- d) 3

20. The surface area of a sphere is given by the formula $4\pi r^2$. What is the surface area of a sphere with radius 7 cm?

- a) 616 cm^2
- b) 154 cm^2
- c) 50 cm^2
- d) 22 cm^2

21. Which river is known as the lifeline of the desert areas in Rajasthan?

- a) Narmada
- b) Ravi
- c) Luni
- d) Tapti

22. Which of the following best represents the Estates-General meeting in 1789 ?

- a) Demand by the clergy for higher taxes
- b) Introduction of the Guillotine
- c) Demand for a constitution by the Third Estate
- d) Abolition of the monarchy

23. Which event marked the beginning of the French Revolution?

- a) Storming of the Bastille
- b) Execution of Louis XVI
- c) Formation of the Estates-General
- d) Declaration of the Rights of Man

24. What was the primary cause of the financial crisis in France before the Revolution?

- a) Wars with Britain
- b) Lavish lifestyle of the monarchy
- c) Poor harvests
- d) All of the above

Rough Work

25. The river Brahmaputra is an example of which type of drainage pattern?

- a) Radial
- b) Dendritic
- c) Trellis
- d) Parallel

26. Which of the following rivers is associated with the Ganga-Brahmaputra delta?

- a) Narmada
- b) Mahanadi
- c) Ganga
- d) Godavari

27. Which event marked the beginning of the French Revolution?

- a) Storming of the Bastille
- b) Execution of Louis XVI
- c) Formation of the Estates-General
- d) Declaration of the Rights of Man

28. What was the primary cause of the financial crisis in France before the Revolution?

- a) Wars with Britain
- b) Lavish lifestyle of the monarchy
- c) Poor harvests
- d) All of the above

29. The Russian Revolution led to the establishment of which government?

- a) Communist
- b) Monarchy
- c) Dictatorship
- d) Socialist Republic

30. Who was the leader of the Bolsheviks during the Russian Revolution?

- a) Joseph Stalin
- b) Vladimir Lenin
- c) Leon Trotsky
- d) Tsar Nicholas II

ENGLISH

31. Identify the sentence with the correct tense usage:

- a) She is played piano beautifully.
- b) She play the piano beautifully.
- c) She plays the piano beautifully.
- d) She has been playing the piano beautifully tomorrow.

32. Choose the correct form of the verb in the sentence: "By next year, she ____ her thesis."

- a) completes
- b) has completed
- c) will have completed
- d) will complete

33. Which sentence is in the past perfect tense?

- a) She had cooked dinner by the time we arrived.
- b) She cooked dinner last night.
- c) She cooks dinner every evening.
- d) She is cooking dinner now.

34. Choose the correct sentence:

- a) He has been working in this office since three years.
- b) He has been working in this office for three years.
- c) He has been working in this office from three years.
- d) He is working in this office since three years.

35. What does the idiom “burn the midnight oil” mean?

- a) Waste energy unnecessarily
- b) Stay up late working or studying
- c) Work during the day
- d) Save money

36. The phrase “a piece of cake” refers to something that is:

- a) Delicious
- b) Difficult
- c) Expensive
- d) Easy

37. Change the sentence to reported speech: “He said, ‘I am reading a book.’”

- a) He said that he is reading a book.
- b) He said that he was reading a book.
- c) He said that he reads a book.
- d) He said that I am reading a book.

38. Which of the following is an example of indirect speech?

- a) She said, “I love chocolate.”
- b) She said that she loved chocolate.
- c) “I love chocolate,” she said.
- d) She says, “I love chocolate.”

39. A person who loves books is called:

- a) Bibliophile
- b) Philanthropist
- c) Cartographer
- d) Ethnologist

40. A person who does not believe in the existence of God is called:

- a) Theist
- b) Atheist
- c) Agnostic
- d) Ascetic

PHYSICS

- 41. When a cricket ball is hit for a six, which force is responsible for bringing it back to the ground?**
- Muscular force
 - Gravitational force
 - Frictional force
 - Magnetic force
- 42. Which statement is true about the universal law of gravitation?**
- It depends only on the masses of objects.
 - It applies only to celestial objects.
 - It depends inversely on the square of the distance between two objects.
 - It works only on Earth.
- 43. What does the slope of a distance-time graph represent?**
- Speed
 - Acceleration
 - Distance
 - Time
- 44. Which law of motion explains the action-reaction pair?**
- First law
 - Second law
 - Third law
 - Law of gravitation
- 45. The frequency of a sound wave is measured in:**
- Decibels
 - Hertz
 - Meters
 - Seconds
- 46. The weight of an object is the force exerted on it by :**
- Friction
 - Magnetism
 - Gravity
 - Electricity
- 47. Which of the following does not affect the speed of sound?**
- Temperature
 - Density of the medium
 - Frequency of the sound
 - State of the medium (solid, liquid, gas)

CHEMISTRY

48. Which of the following processes

demonstrates the kinetic energy of particles in matter?

- a) Melting of ice
- b) Breaking of a chalk piece
- c) Dissolution of salt in water
- d) Sublimation of camphor

49. The stability of an atom is explained best by which of the following models?

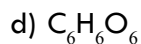
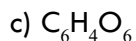
- a) Dalton's Atomic Model
- b) Thomson's Plum Pudding Model
- c) Rutherford's Nuclear Model
- d) Bohr's Model of Atom

50. Which of these methods is used to separate a mixture of salt and camphor?

- a) Filtration
- b) Sublimation
- c) Distillation
- d) Crystallization

51. What is the molecular formula of glucose?

- a) $C_6H_{12}O_6$
- b) $C_6H_{10}O_5$



52. The atomic number of an element is determined by the number of:

- a) Neutrons in the nucleus
- b) Protons in the nucleus
- c) Electrons in the atom
- d) Protons and neutrons in the nucleus

53. Which of the following is true about isotopes?

- a) Isotopes have the same number of protons but different numbers of neutrons.
- b) Isotopes have different numbers of protons.
- c) Isotopes have the same number of neutrons but different numbers of electrons.
- d) Isotopes have different numbers of protons and neutrons.

54. What happens to the boiling point of water at higher altitudes?

- a) Increases
- b) Decreases
- c) Remains constant
- d) Doubles

BIOLOGY

- 55. The process of photosynthesis takes place in which part of the plant cell?**
- a) Nucleus
 - b) Chloroplast
 - c) Mitochondria
 - d) Ribosome
- 56. Xylem tissue in plants is responsible for:**
- a) Transporting water
 - b) Transporting food
 - c) Storing food
 - d) Photosynthesis
- 57. Which type of animal tissue is responsible for sending electrical signals?**
- a) Connective tissue
 - b) Epithelial tissue
 - c) Nervous tissue
 - d) Muscle tissue
- 58. The control center of the cell is the:**
- a) Mitochondria
 - b) Nucleus
 - c) Ribosomes
 - d) Golgi apparatus
- 59. Which organelle is responsible for producing energy in the cell?**
- a) Ribosomes
 - b) Mitochondria
 - c) Endoplasmic Reticulum
 - d) Nucleus
- 60. Which type of plant tissue is responsible for transporting water from roots to leaves?**
- a) Xylem
 - b) Phloem
 - c) Epidermis
 - d) Parenchyma