

SYLLABAX

OLYMPIAD PRACTICE SERIES

Class 9 – Olympiad Practice Paper

Total Questions: 50 | Mathematics · Science · Logical Reasoning · English · General Knowledge

✓ All answers verified | ✓ Olympiad level | ✓ Free to download

Instructions: Each question carries 1 mark. Only one option (A/B/C/D) is correct. No negative marking. Answer key is provided at the end of this paper. | **Time suggested:** 45 minutes.

MATHEMATICS

- The roots of the equation $x^2 - 5x + 6 = 0$ are:
A) 2 and 3
B) 2 and -3
C) -2 and 3
D) -2 and -3
- What is the value of $\sin 30^\circ$?
A) 0
B) $1/2$
C) $\sqrt{3}/2$
D) 1
- If $a : b = 2 : 3$ and $b : c = 4 : 5$, what is $a : c$?
A) 4:5
B) 8:15
C) 2:5
D) 6:10
- What is the value of $\log_2 8$?
A) 2
B) 3
C) 4
D) 8
- In an arithmetic progression, the first term is 3 and the common difference is 4. What is the 10th term?
A) 35
B) 37
C) 39
D) 43
- What is the area of a sector with radius 14 cm and central angle 90° ? (Use $\pi = 22/7$)
A) 88 cm^2
B) 132 cm^2
C) 154 cm^2
D) 176 cm^2
- What is the surface area of a sphere with radius 7 cm? (Use $\pi = 22/7$)
A) 308 cm^2
B) 462 cm^2
C) 616 cm^2
D) 924 cm^2

20. According to Ohm's Law, if voltage doubles while resistance remains constant, the current:

- A) Halves
- B) Stays the same
- C) Doubles
- D) Quadruples

21. What is the chemical formula of glucose?

- A) $C_6H_{10}O_5$
- B) $C_6H_{12}O_6$
- C) $C_{12}H_{22}O_{11}$
- D) CH_3OH

22. Mitochondria is known as the powerhouse of the cell because it:

- A) Controls cell division
- B) Produces ATP (energy)
- C) Synthesises proteins
- D) Stores genetic information

23. Boyle's Law states that at constant temperature, the pressure of a gas is:

- A) Directly proportional to volume
- B) Inversely proportional to volume
- C) Equal to volume
- D) Independent of volume

24. Which of the following is NOT a type of rock?

- A) Igneous
- B) Sedimentary
- C) Metamorphic
- D) Calcite

25. Fleming's Left-Hand Rule is used to determine the direction of force on a conductor in:

- A) A generator
- B) A transformer
- C) An electric motor
- D) A battery

26. The rate of a chemical reaction generally increases when the temperature is:

- A) Decreased
- B) Increased
- C) Kept constant
- D) Halved

27. In the periodic table, the period number indicates the number of:

- A) Electrons in outermost shell
- B) Protons
- C) Electron shells (energy levels)
- D) Neutrons

28. The process by which plants prepare food (respiration equation): $C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O + \underline{\hspace{1cm}}$

- A) Light
- B) Energy (ATP)
- C) Glucose
- D) Proteins

29. Electromagnetic waves, including light, travel through vacuum at:

- A) Speed of sound (~ 340 m/s)
- B) Speed of light ($\sim 3 \times 10^8$ m/s)
- C) Speed of electrons
- D) Infinite speed

30. Which acid is present in the human stomach that helps in digestion?

- A) Sulphuric acid
- B) Nitric acid
- C) Hydrochloric acid
- D) Acetic acid

LOGICAL REASONING

31. Find the next number in the series: 1, 4, 10, 22, 46, ___ (Pattern: $\times 2 + 2$)

- A) 88
- B) 92
- C) 94
- D) 96

32. In a code, each consonant is replaced by the letter 2 positions ahead and each vowel by the letter 1 position behind. What is the code for MANGO? (M,N,G are consonants; A,O are vowels)

- A) OZPIN
B) OCPKN
C) PZQIN
D) NZOHN

33. In a class, 60% like Cricket, 40% like Football, and 20% like both. What percentage like EXACTLY ONE sport?

- A) 40%
B) 60%
C) 80%
D) 100%

34. Logical argument: 'All birds can fly. Penguins cannot fly.' If we accept both statements as absolute truths, what can we conclude?

- A) Penguins are not birds
B) Some birds cannot fly
C) All birds are penguins
D) Penguins can sometimes fly

35. A 2-digit number has digits whose product is 24 and whose sum is 10. Which of the following could be the number?

- A) 38
B) 46
C) 57
D) 39

36. How many distinct ways can 6 people be seated around a circular table?

- A) 720
B) 120
C) 240
D) 360

37. Find the odd one out: 8, 27, 64, 100, 125

- A) 27
B) 64
C) 100
D) 125

38. Complete the analogy: Surgeon : Scalpel :: Carpenter : ?

- A) Wood
B) Saw
C) House
D) Nails

39. Logic: 'Either it rains tomorrow OR I will go for a walk. It did not rain tomorrow.' What can we conclude?

- A) I went for a walk
B) I did not go for a walk
C) It rained
D) Nothing can be concluded

40. In a test, Arjun ranks 8th from the top and 15th from the bottom. How many students appeared for the test?

- A) 21
B) 22
C) 23
D) 24

ENGLISH

41. Choose the correct SYNONYM of EPHEMERAL:

- A) Permanent
B) Eternal
C) Transient
D) Recurring

Answer Key – Class 9 Olympiad Practice Paper

1. A	2. B	3. B	4. B	5. C	6. C	7. C	8. C	9. C	10. C
11. C	12. C	13. B	14. D	15. B	16. C	17. B	18. B	19. C	20. C
21. B	22. B	23. B	24. D	25. C	26. B	27. C	28. B	29. B	30. C
31. C	32. A	33. B	34. A	35. B	36. B	37. C	38. B	39. A	40. B
41. C	42. C	43. A	44. B	45. B	46. C	47. C	48. D	49. D	50. C

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