

Class 9 · Science Olympiad

Total questions 50	Total marks 60	Time 60 minutes	Negative marking None
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Each question has four options, of which only one is correct. Mark your answer on the answer sheet. The Achievers Section carries higher marks per question. The answer key with full solutions is at the end of this paper.

This is original practice material written to the Level 1 pattern. It is not a past paper and is not affiliated with SOF or any official olympiad body.

Logical Reasoning

10 questions · 1 mark each · 10 marks

Q1. A father is 10 years older than his son. The son is 16 years old now. How old will the father be after 2 years?

- (A) 26 years (B) 30 years (C) 28 years (D) 29 years

Q2. In a class, 22 students play cricket, 19 play football and 7 play both games. Every student plays at least one of the two. How many students are there in the class?

- (A) 27 (B) 35 (C) 34 (D) 41

Q3. Five friends A, B, C, D and E sit in a row of five seats. A sits at the extreme left end, D sits at the extreme right end, C sits exactly in the middle and B sits between A and C. Who sits in the fourth seat from the left?

- (A) B (B) C (C) E (D) D

Q4. In a row of 27 children, Tara is 17th from the left end. What is Tara's position from the right end?

- (A) 13th (B) 10th (C) 12th (D) 11th

Q5. Riya walks 7 m towards north, turns right and walks 5 m, then turns right again and walks 7 m. How far is Riya from the starting point, and in which direction?

- (A) 12 m, North (B) 5 m, East (C) 5 m, West (D) 7 m, East

Q6. In a queue, Farah is 11th from the front and 9th from the back. How many people are in the queue altogether?

- (A) 21 (B) 20 (C) 18 (D) 19

Q7. Find the odd one out: 27, 36, 49, 54, 72

- (A) 49 (B) 27 (C) 54 (D) 72

Q8. Read the statements and choose the conclusion that **MUST** be true.

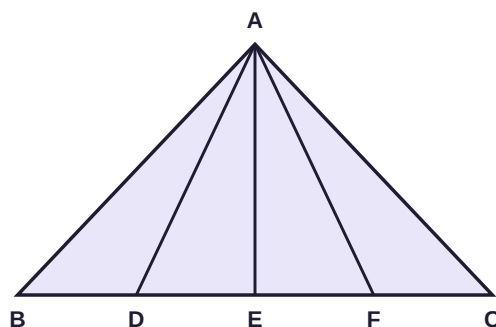
All squares are rectangles. All rectangles have four sides.

- (A) Some squares have three sides. (B) No rectangle is a square.
(C) All squares have four sides. (D) All rectangles are squares.

Q9. In the first row the numbers are 2, 3 and 10. In the second row they are 5, 3 and 16. In the third row they are 4, 9 and _____. The same rule applies to every row.

- (A) 25 (B) 26 (C) 28 (D) 27

Q10. How many triangles are there in the given figure?



- (A) 9 (B) 10 (C) 11 (D) 12

Science

35 questions · 1 mark each · 35 marks

Q11. What is the unit of force?

- (A) Newton (B) Pascal (C) Joule (D) Watt

Q12. Which blood group is called the universal donor?

- (A) B negative (B) A positive (C) O negative (D) AB positive

Q13. Which part of the cell controls its activities?

- (A) The cell wall (B) The cytoplasm
(C) The vacuole (D) The nucleus

Q14. What is the chemical symbol for sodium?

- (A) S (B) So (C) Sd (D) Na

Q15. Which is the smallest particle of an element that can take part in a reaction?

- (A) Crystal (B) Cell (C) Molecule (D) Atom

Q16. What is the SI unit of electric current?

- (A) Watt (B) Ohm (C) Ampere (D) Volt

Q17. Green colour in leaves is due to which pigment?

- (A) Haemoglobin (B) Carotene (C) Chlorophyll (D) Melanin

Q18. What is the function of the root hairs of a plant?

- (A) To hold the flower (B) To store sunlight
(C) To make food (D) To absorb water and minerals

Q19. Which food gives us the most energy?

- (A) Carbohydrates (B) Vitamins
(C) Water (D) Minerals

Q20. Which gas is produced when an acid reacts with a metal?

- (A) Nitrogen (B) Chlorine (C) Oxygen (D) Hydrogen

Q21. Water freezes into ice at which temperature?

- (A) -100°C (B) 10°C (C) 100°C (D) 0°C

Q22. Which of these is a physical change?

- | | |
|----------------------|---------------------|
| (A) Burning of paper | (B) Melting of ice |
| (C) Rusting of iron | (D) Cooking of food |

Q23. Which gas do plants take in during photosynthesis?

- | | |
|--------------------|--------------|
| (A) Carbon dioxide | (B) Nitrogen |
| (C) Hydrogen | (D) Oxygen |

Q24. Which organ removes waste from the blood and makes urine?

- | | | | |
|----------------|---------------|---------------|--------------|
| (A) The kidney | (B) The liver | (C) The heart | (D) The lung |
|----------------|---------------|---------------|--------------|

Q25. Which simple machine is used in a see-saw?

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|-----------|-----------|-----------|------------|
| (A) Wedge | (B) Lever | (C) Screw | (D) Pulley |
|-----------|-----------|-----------|------------|

Q26. What is the acceleration due to gravity on Earth, approximately?

- | | |
|-------------------------------|-------------------------------|
| (A) About 1.6 m/s^2 | (B) About 3.7 m/s^2 |
| (C) About 98 m/s^2 | (D) About 9.8 m/s^2 |

Q27. Which of these is a renewable source of energy?

- | | | | |
|------------|------------------|------------|----------|
| (A) Petrol | (B) Solar energy | (C) Diesel | (D) Coal |
|------------|------------------|------------|----------|

Q28. Which part of the human eye controls how much light enters?

- | | |
|---------------------|----------------|
| (A) The optic nerve | (B) The cornea |
| (C) The iris | (D) The retina |

Q29. What kind of energy does a moving object have?

- | | |
|--------------------|---------------------|
| (A) Kinetic energy | (B) Chemical energy |
| (C) Nuclear energy | (D) Sound energy |

Q30. What is the normal body temperature of a healthy human?

- | | | | |
|------------------------------|------------------------------|------------------------------|------------------------------|
| (A) About 37°C | (B) About 25°C | (C) About 42°C | (D) About 30°C |
|------------------------------|------------------------------|------------------------------|------------------------------|

Q31. Which planet is nearest to the Sun?

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|----------|-------------|-----------|-----------|
| (A) Mars | (B) Mercury | (C) Venus | (D) Earth |
|----------|-------------|-----------|-----------|

Q32. Which of these is a mixture and not a compound?

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|-----------|--------------------|
| (A) Water | (B) Common salt |
| (C) Air | (D) Carbon dioxide |

Q33. How many bones does an adult human body have?

- | | | | |
|---------|---------|---------|---------|
| (A) 206 | (B) 212 | (C) 300 | (D) 201 |
|---------|---------|---------|---------|

Q34. What is the SI unit of power?

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|----------|------------|----------|-----------|
| (A) Watt | (B) Newton | (C) Volt | (D) Joule |
|----------|------------|----------|-----------|

Q35. Common salt is chemically known as:

- | | |
|------------------------|-----------------------|
| (A) Sodium bicarbonate | (B) Sodium chloride |
| (C) Calcium carbonate | (D) Potassium nitrate |

- Q36. What is the chemical symbol for gold?
 (A) Go (B) Gd (C) Ag (D) Au
- Q37. Which of these is a non-biodegradable waste?
 (A) Cotton cloth (B) Vegetable peel
 (C) Plastic bag (D) Paper
- Q38. Loss of water vapour from the leaves of a plant is called:
 (A) Condensation (B) Transpiration
 (C) Respiration (D) Germination
- Q39. What is the process of water changing into vapour called?
 (A) Condensation (B) Freezing (C) Melting (D) Evaporation
- Q40. What kind of energy is stored in a stretched rubber band?
 (A) Light energy (B) Kinetic energy
 (C) Potential energy (D) Sound energy
- Q41. Which planet is known as the Red Planet?
 (A) Mars (B) Venus (C) Jupiter (D) Saturn
- Q42. Two objects of different masses are dropped in a vacuum. Which lands first?
 (A) The heavier one (B) Neither falls in a vacuum
 (C) The lighter one (D) They land together
- Q43. Which vitamin do we get from sunlight?
 (A) Vitamin K (B) Vitamin C (C) Vitamin D (D) Vitamin A
- Q44. Which part of the plant carries water from the roots to the leaves?
 (A) The cuticle (B) The stomata (C) The phloem (D) The xylem
- Q45. What colour does blue litmus paper turn in an acid?
 (A) Red (B) Yellow
 (C) It stays blue (D) Green

Achievers Section

5 questions · 3 marks each · 15 marks

- Q46. A metal spoon left in hot soup soon feels hot at the handle. Why?
 (A) Metal conducts heat along the spoon (B) Soup climbs up the spoon
 (C) Metal always stays hot (D) The handle makes its own heat
- Q47. If LAMP is coded as NCOR, how is GATE coded?
 (A) KEXI (B) ICVG (C) EYRC (D) GVCI
- Q48. How many numbers between 60 and 85 leave a remainder of 3 when divided by 6?
 (A) 5 (B) 6 (C) 4 (D) 3
- Q49. 6 taps together fill a tank in 75 minutes. How long will 5 taps of the same kind take to fill it?
 (A) 87 minutes (B) 75 minutes (C) 90 minutes (D) 93 minutes

- Q50. A website address begins with https:// instead of http://. What does the extra "s" mean?
- (A) The site is faster (B) The site is in English
- (C) The site is free (D) The connection is secure and encrypted

Answer Key

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

Solutions

- Q1. (C) The father is $16 + 10 = 26$ now, so after 2 years he will be $26 + 2 = 28$ years.
- Q2. (C) $22 + 19 - 7 = 34$. The 7 who play both were counted twice, so they are subtracted once.
- Q3. (C) Seat 1 = A, seat 3 = C, seat 5 = D. B must be between A and C, so B takes seat 2, and the only friend left for seat 4 is E.
- Q4. (D) Position from the right = total - position from the left + 1 = $27 - 17 + 1 = 11$ th.
- Q5. (B) The two 7 m walks (north, then south) cancel out, leaving only the 5 m walked towards the east. So the answer is 5 m, East.
- Q6. (D) Counting Farah only once: $11 + 9 - 1 = 19$ people.
- Q7. (A) Every other number is a multiple of 9. 49 is not.
- Q8. (C) From "All squares are rectangles. All rectangles have four sides." it follows necessarily that all squares have four sides.
- Q9. (B) The rule is: add the two numbers and double the result. Check: 2, 3 gives 10 and 5, 3 gives 16; so 4, 9 gives 26.
- Q10. (B) Every triangle has apex A and two of the 5 base points as its other corners. Choosing 2 from 5 gives 10 triangles.
- Q11. (A) Force is measured in newtons (N).
- Q12. (C) O negative blood can be given to almost anyone, so it is the universal donor.
- Q13. (D) The nucleus is the control centre of the cell.
- Q14. (D) Sodium has the symbol Na, from the Latin natrium.
- Q15. (D) An atom is the smallest particle of an element that takes part in a chemical change.
- Q16. (C) Electric current is measured in amperes (A).
- Q17. (C) Chlorophyll gives leaves their green colour and traps sunlight for photosynthesis.
- Q18. (D) Root hairs greatly increase the surface for absorbing water and minerals. The answer is To absorb water and minerals.
- Q19. (A) Carbohydrates such as rice, wheat and potato are the body's main energy food.

- Q20. (D) Acid plus metal gives a salt and hydrogen gas.
- Q21. (D) At normal pressure water freezes at 0°C and boils at 100°C.
- Q22. (B) Melting changes only the state, not the substance, so it is a physical change. The answer is Melting of ice.
- Q23. (A) Plants take in carbon dioxide and release oxygen during photosynthesis.
- Q24. (A) The kidneys filter the blood and produce urine.
- Q25. (B) A see-saw is a lever balancing on a pivot called the fulcrum.
- Q26. (D) On Earth g is about 9.8 metres per second squared. The answer is About 9.8 m/s².
- Q27. (B) Sunlight is renewable; coal, petrol and diesel are fossil fuels that run out. The answer is Solar energy.
- Q28. (C) The iris changes the size of the pupil to control the light entering.
- Q29. (A) Energy due to motion is called kinetic energy.
- Q30. (A) Normal human body temperature is about 37°C (98.6°F).
- Q31. (B) Mercury is the closest planet to the Sun.
- Q32. (C) Air is a mixture of gases that keep their own properties.
- Q33. (A) An adult skeleton has 206 bones; a baby is born with about 300, which later fuse.
- Q34. (A) Power is the rate of doing work, measured in watts.
- Q35. (B) Common salt is sodium chloride, NaCl.
- Q36. (D) Gold has the symbol Au, from the Latin aurum.
- Q37. (C) Plastic does not rot away naturally, so it is non-biodegradable. The answer is Plastic bag.
- Q38. (B) Transpiration is the loss of water vapour through the stomata.
- Q39. (D) Evaporation is liquid water turning into vapour; condensation is the reverse.
- Q40. (C) A stretched band stores elastic potential energy.
- Q41. (A) Mars looks red because of the iron oxide dust on its surface.
- Q42. (D) With no air resistance all objects fall with the same acceleration. The answer is They land together.
- Q43. (C) Our skin makes vitamin D when sunlight falls on it; it helps build strong bones.
- Q44. (D) Xylem tissue carries water upwards; phloem carries food. The answer is The xylem.
- Q45. (A) Acids turn blue litmus red; bases turn red litmus blue.
- Q46. (A) Metals are good conductors, so heat travels along the spoon to the handle. The answer is Metal conducts heat along the spoon.
- Q47. (B) Every letter moves 2 place(s) forward, so GATE becomes ICVG.
- Q48. (C) The numbers are 63, 69, 75, 81 — 4 of them.
- Q49. (C) One tap alone would take $6 \times 75 = 450$ minutes. With 5 taps the time is $450 / 5 = 90$ minutes.
- Q50. (D) The "s" stands for secure: the data sent to the site is encrypted. The answer is The connection is secure and encrypted.

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