

Class 8 · 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. Find the next number in the pattern: 9, 16, 23, 30, ____

- (A) 44 (B) 30 (C) 38 (D) 37

Q2. Which word would come FIRST in a dictionary?

- (A) mother (B) metal (C) matter (D) mango

Q3. Which letter comes next? B, D, G, K, ____

- (A) O (B) Q (C) N (D) P

Q4. Count backward in 5s: 55, 50, 45, 40, ____

- (A) 40 (B) 36 (C) 30 (D) 35

Q5. Which one does NOT belong with the others?

- (A) Wood (B) Copper (C) Silver (D) Gold

Q6. In a class, 17 students play cricket, 9 play football and 4 play both games. Every student plays at least one of the two. How many students are there in the class?

- (A) 23 (B) 26 (C) 18 (D) 22

Q7. In the first row the numbers are 2, 3 and 4. In the second row they are 3, 8 and 22. In the third row they are 8, 6 and ____ . The same rule applies to every row.

- (A) 45 (B) 48 (C) 46 (D) 47

Q8. Pen : Write :: Knife : ____

- (A) Sing (B) Cut (C) Sleep (D) Run

Q9. Nila walks 4 m north, then 10 m east, then 3 m south. Where is Nila now, relative to the starting point?

- (A) 2 m north and 10 m east (B) 1 m north and 11 m east
(C) 4 m north and 10 m east (D) 1 m north and 10 m east

Q10. If the 15th of a month is a Sunday, what day of the week is the 28th of the same month?

- (A) Monday (B) Friday (C) Sunday (D) Saturday

Science

35 questions · 1 mark each · 35 marks

- Q11. What is the SI unit of power?
(A) Newton (B) Watt (C) Joule (D) Volt
- Q12. Water freezes into ice at which temperature?
(A) 0°C (B) 10°C (C) -100°C (D) 100°C
- Q13. Which layer of the atmosphere protects us from harmful ultraviolet rays?
(A) The troposphere (B) The ozone layer
(C) The exosphere (D) The magnetosphere
- Q14. At what temperature does water boil at normal pressure?
(A) 212°C (B) 0°C (C) 100°C (D) 50°C
- Q15. What is the SI unit of electric current?
(A) Ampere (B) Watt (C) Volt (D) Ohm
- Q16. How many bones does an adult human body have?
(A) 201 (B) 206 (C) 212 (D) 300
- Q17. Which device converts electrical energy into light energy?
(A) A dynamo (B) An electric bulb
(C) A battery (D) A microphone
- Q18. How long does the Earth take to complete one rotation on its axis?
(A) 24 hours (B) 12 hours (C) 30 days (D) 365 days
- Q19. Which gas is produced when an acid reacts with a metal?
(A) Hydrogen (B) Chlorine (C) Oxygen (D) Nitrogen
- Q20. What is the basic unit of life?
(A) The cell (B) The atom (C) The organ (D) The tissue
- Q21. What is the chemical symbol for gold?
(A) Gd (B) Go (C) Ag (D) Au
- Q22. Light travels fastest through which of these?
(A) Glass (B) Water (C) Air (D) Vacuum
- Q23. Which process do green plants use to make their own food?
(A) Transpiration (B) Photosynthesis
(C) Digestion (D) Respiration
- Q24. Which of these is a good conductor of electricity?
(A) Rubber (B) Copper (C) Wood (D) Plastic
- Q25. What is the acceleration due to gravity on Earth, approximately?
(A) About 9.8 m/s² (B) About 3.7 m/s²
(C) About 98 m/s² (D) About 1.6 m/s²

- Q26. What kind of energy does a moving object have?
- (A) Sound energy (B) Kinetic energy
(C) Chemical energy (D) Nuclear energy
- Q27. Two objects of different masses are dropped in a vacuum. Which lands first?
- (A) The lighter one (B) Neither falls in a vacuum
(C) The heavier one (D) They land together
- Q28. What colour does blue litmus paper turn in an acid?
- (A) Yellow (B) It stays blue
(C) Green (D) Red
- Q29. How many atoms of oxygen are there in one molecule of carbon dioxide?
- (A) One (B) Four (C) Three (D) Two
- Q30. Which of these is a non-biodegradable waste?
- (A) Vegetable peel (B) Cotton cloth
(C) Paper (D) Plastic bag
- Q31. What is the function of the root hairs of a plant?
- (A) To hold the flower (B) To make food
(C) To absorb water and minerals (D) To store sunlight
- Q32. Which food gives us the most energy?
- (A) Carbohydrates (B) Minerals
(C) Vitamins (D) Water
- Q33. What is the chemical symbol for sodium?
- (A) Sd (B) Na (C) S (D) So
- Q34. Which part of the plant develops into a fruit?
- (A) The ovary (B) The stamen (C) The sepal (D) The petal
- Q35. What is the normal body temperature of a healthy human?
- (A) About 25°C (B) About 37°C (C) About 42°C (D) About 30°C
- Q36. Which gas makes up most of the air around us?
- (A) Nitrogen (B) Carbon dioxide
(C) Hydrogen (D) Oxygen
- Q37. An eclipse of the Sun happens when:
- (A) The Earth comes between the Sun and the Moon (B) The Sun comes between the Earth and the Moon
(C) The Moon comes between the Earth and the Sun (D) The Earth stops rotating
- Q38. How many planets are there in our solar system?
- (A) Eight (B) Nine (C) Ten (D) Seven

Q39. Which of these is a physical change?

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

Q40. Green colour in leaves is due to which pigment?

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

Q41. Which colour of white light bends the most when passing through a prism?

- (A) Yellow (B) Red (C) Green (D) Violet

Q42. What is the unit of force?

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

Q43. Which of these is a major cause of global warming?

- (A) Planting more trees (B) Walking to school
(C) Using solar energy (D) Excess carbon dioxide in the atmosphere

Q44. What is the natural satellite of the Earth called?

- (A) The Moon (B) A comet (C) The Sun (D) Mars

Q45. Rusting of iron needs which two things?

- (A) Nitrogen and water (B) Oxygen and salt only
(C) Carbon dioxide and water (D) Oxygen and water

Achievers Section

5 questions · 3 marks each · 15 marks

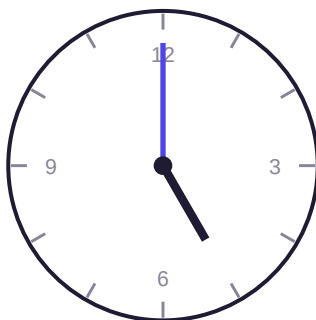
Q46. How many numbers between 60 and 80 leave a remainder of 2 when divided by 8?

- (A) 3 (B) 1 (C) 2 (D) 4

Q47. The binary number 1000 equals which decimal number?

- (A) 4 (B) 8 (C) 16 (D) 1000

Q48. The clock in the figure shows 5:00. What is the angle between the hour hand and the minute hand?



- (A) 180° (B) 150° (C) 135° (D) 165°

Q49. A metal spoon left in hot soup soon feels hot at the handle. Why?

- (A) Metal always stays hot (B) The handle makes its own heat
(C) Metal conducts heat along the spoon (D) Soup climbs up the spoon

Q50. Rahul finished the puzzle in two minutes and said it was 'to burn the midnight oil'. What did he mean?

- (A) to cook dinner (B) to waste money
(C) to work late into the night (D) to fall asleep

Answer Key

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

Solutions

Q1. (D) Each number is 7 more than the one before it, so the next is $30 + 7 = 37$.

Q2. (D) In alphabetical order the words run mango, matter, metal, mother, so mango comes first.

Q3. (D) The gaps grow by one each time (+2, +3, +4, +5), so after K the next letter is P.

Q4. (D) Subtracting 5 from 40 gives 35.

Q5. (A) Wood is not a metal.

Q6. (D) $17 + 9 - 4 = 22$. The 4 who play both were counted twice, so they are subtracted once.

Q7. (C) The rule is: multiply the two numbers, then subtract 2. Check: 2, 3 gives 4 and 3, 8 gives 22; so 8, 6 gives 46.

Q8. (B) The second word relates to the first in the same way Cut relates to Knife.

Q9. (D) The 3 m south cancels part of the 4 m north, leaving $4 - 3 = 1$ m north, and the 10 m east is unchanged. So Nila is 1 m north and 10 m east.

Q10. (D) 13 days later is 1 week(s) and 6 day(s), so the day moves 6 place(s) on from Sunday to Saturday.

Q11. (B) Power is the rate of doing work, measured in watts.

Q12. (A) At normal pressure water freezes at 0°C and boils at 100°C .

Q13. (B) The ozone layer absorbs most of the Sun's harmful ultraviolet radiation.

Q14. (C) Water boils at 100°C at normal atmospheric pressure.

Q15. (A) Electric current is measured in amperes (A).

Q16. (B) An adult skeleton has 206 bones; a baby is born with about 300, which later fuse.

Q17. (B) A bulb takes in electrical energy and gives out light and heat. The answer is An electric bulb.

Q18. (A) One rotation takes about 24 hours and gives us day and night.

- Q19. (A) Acid plus metal gives a salt and hydrogen gas.
- Q20. (A) Every living thing is made of cells, the basic unit of life. The answer is The cell.
- Q21. (D) Gold has the symbol Au, from the Latin aurum.
- Q22. (D) Light travels fastest in a vacuum and slows down in denser media.
- Q23. (B) Photosynthesis makes glucose from carbon dioxide and water using sunlight.
- Q24. (B) Metals such as copper conduct electricity; rubber, wood and plastic are insulators.
- Q25. (A) On Earth g is about 9.8 metres per second squared. The answer is About 9.8 m/s².
- Q26. (B) Energy due to motion is called kinetic energy.
- Q27. (D) With no air resistance all objects fall with the same acceleration. The answer is They land together.
- Q28. (D) Acids turn blue litmus red; bases turn red litmus blue.
- Q29. (D) Carbon dioxide is CO₂, so it has two oxygen atoms.
- Q30. (D) Plastic does not rot away naturally, so it is non-biodegradable. The answer is Plastic bag.
- Q31. (C) Root hairs greatly increase the surface for absorbing water and minerals. The answer is To absorb water and minerals.
- Q32. (A) Carbohydrates such as rice, wheat and potato are the body's main energy food.
- Q33. (B) Sodium has the symbol Na, from the Latin natrium.
- Q34. (A) After fertilisation the ovary of the flower grows into the fruit.
- Q35. (B) Normal human body temperature is about 37°C (98.6°F).
- Q36. (A) Air is about 78% nitrogen and about 21% oxygen.
- Q37. (C) In a solar eclipse the Moon passes between the Earth and the Sun and blocks its light. The answer is The Moon comes between the Earth and the Sun.
- Q38. (A) There are eight planets, from Mercury to Neptune.
- Q39. (D) Melting changes only the state, not the substance, so it is a physical change. The answer is Melting of ice.
- Q40. (C) Chlorophyll gives leaves their green colour and traps sunlight for photosynthesis.
- Q41. (D) Violet has the shortest wavelength and is deviated the most.
- Q42. (B) Force is measured in newtons (N).
- Q43. (D) Greenhouse gases such as carbon dioxide trap heat and warm the planet. The answer is Excess carbon dioxide in the atmosphere.
- Q44. (A) The Moon is the Earth's only natural satellite.
- Q45. (D) Iron rusts when it is exposed to both oxygen and moisture. The answer is Oxygen and water.
- Q46. (C) The numbers are 66, 74 — 2 of them.
- Q47. (B) 1000 in binary is $1 \times 8 + 0 \times 4 + 0 \times 2 + 0 \times 1 = 8$.
- Q48. (B) The minute hand is at 0° from 12 and the hour hand at 150° from 12, so the angle between them is 150°.
- Q49. (C) Metals are good conductors, so heat travels along the spoon to the handle. The answer is Metal conducts heat along the spoon.
- Q50. (C) In this sentence 'to burn the midnight oil' means to work late into the night.

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