

Class 7 · 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. 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) D (B) E (C) B (D) C

Q2. Read the statements and choose the conclusion that **MUST** be true.

All roses are flowers. All flowers need water.

- (A) Some roses do not need water. (B) Only roses need water.
(C) All roses need water. (D) All flowers are roses.

Q3. Doctor : Hospital :: Teacher : ____

- (A) Court (B) School (C) Farm (D) Factory

Q4. In a queue, Deep is 10th from the front and 4th from the back. How many people are in the queue altogether?

- (A) 12 (B) 15 (C) 13 (D) 14

Q5. Riya walks 9 m towards north, turns right and walks 3 m, then turns right again and walks 9 m. How far is Riya from the starting point, and in which direction?

- (A) 3 m, East (B) 3 m, West (C) 9 m, East (D) 12 m, North

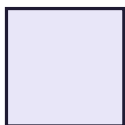
Q6. In a row of 33 children, Imran is 4th from the left end. What is Imran's position from the right end?

- (A) 29th (B) 30th (C) 31th (D) 32th

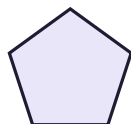
Q7. Count backward in 3s: 21, 18, 15, 12, ____

- (A) 10 (B) 9 (C) 6 (D) 12

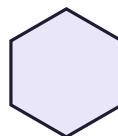
Q8. Which of these figures has exactly 6 lines of symmetry?



(A)



(B)



(C)



(D)

Q9. Find the next number in the pattern: 2, 5, 11, 23, ____

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

Q10. Which letter comes next? B, F, J, N, ____

(A) R

(B) V

(C) Q

(D) S

Science

35 questions · 1 mark each · 35 marks

Q11. Which of these is a major cause of global warming?

(A) Planting more trees

(B) Using solar energy

(C) Walking to school

(D) Excess carbon dioxide in the atmosphere

Q12. What do we call animals that are active at night?

(A) Aquatic animals

(B) Herbivores

(C) Amphibians

(D) Nocturnal animals

Q13. Through which tiny pores do leaves exchange gases?

(A) Stomata

(B) Veins

(C) Roots

(D) Petals

Q14. Which planet is nearest to the Sun?

(A) Mars

(B) Mercury

(C) Earth

(D) Venus

Q15. Rusting of iron needs which two things?

(A) Oxygen and water

(B) Nitrogen and water

(C) Carbon dioxide and water

(D) Oxygen and salt only

Q16. What is the chemical formula of water?

(A) CO₂

(B) NaCl

(C) O₂

(D) H₂O

Q17. Which gas do living things release during respiration?

(A) Hydrogen

(B) Nitrogen

(C) Oxygen

(D) Carbon dioxide

Q18. What is the natural satellite of the Earth called?

(A) Mars

(B) The Moon

(C) A comet

(D) The Sun

Q19. What kind of energy is stored in a stretched rubber band?

(A) Light energy

(B) Kinetic energy

(C) Sound energy

(D) Potential energy

Q20. Which of these is a good conductor of electricity?

(A) Copper

(B) Plastic

(C) Wood

(D) Rubber

Q21. What causes the change of seasons on the Earth?

(A) The Moon blocking the Sun

(B) The tilt of the Earth as it orbits the Sun

(C) Changes in the Sun's size

(D) The Earth moving closer to the Sun

Q22. Which simple machine is used in a see-saw?

(A) Pulley

(B) Lever

(C) Screw

(D) Wedge

Q23. What is the normal body temperature of a healthy human?

(A) About 37°C

(B) About 30°C

(C) About 42°C

(D) About 25°C

- Q24. Green colour in leaves is due to which pigment?
(A) Melanin (B) Haemoglobin (C) Chlorophyll (D) Carotene
- Q25. Which layer of the atmosphere protects us from harmful ultraviolet rays?
(A) The exosphere (B) The troposphere
(C) The magnetosphere (D) The ozone layer
- Q26. What is the unit of force?
(A) Newton (B) Watt (C) Pascal (D) Joule
- Q27. What is the process of separating salt from sea water by heating called?
(A) Distillation of solids (B) Filtration
(C) Evaporation (D) Sublimation
- Q28. Which of these materials is attracted by a magnet?
(A) Paper (B) Iron (C) Cloth (D) Glass
- Q29. Which process do green plants use to make their own food?
(A) Digestion (B) Transpiration
(C) Respiration (D) Photosynthesis
- Q30. Deficiency of which vitamin causes scurvy?
(A) Vitamin A (B) Vitamin D (C) Vitamin B12 (D) Vitamin C
- Q31. Which of these is a physical change?
(A) Cooking of food (B) Rusting of iron
(C) Burning of paper (D) Melting of ice
- Q32. Light travels fastest through which of these?
(A) Vacuum (B) Water (C) Glass (D) Air
- Q33. Loss of water vapour from the leaves of a plant is called:
(A) Respiration (B) Germination
(C) Condensation (D) Transpiration
- Q34. Common salt is chemically known as:
(A) Sodium chloride (B) Sodium bicarbonate
(C) Calcium carbonate (D) Potassium nitrate
- Q35. What is the function of the root hairs of a plant?
(A) To absorb water and minerals (B) To make food
(C) To store sunlight (D) To hold the flower
- Q36. Which part of the plant develops into a fruit?
(A) The sepal (B) The petal (C) The stamen (D) The ovary
- Q37. Which device converts electrical energy into light energy?
(A) A microphone (B) An electric bulb
(C) A battery (D) A dynamo

- Q38. What do we call the water cycle stage where clouds form?
- (A) Filtration (B) Condensation
(C) Evaporation (D) Precipitation
- Q39. Which of these is a mixture and not a compound?
- (A) Common salt (B) Water
(C) Carbon dioxide (D) Air
- Q40. Sound cannot travel through which of these?
- (A) Water (B) Air (C) Vacuum (D) Steel
- Q41. Which organ removes waste from the blood and makes urine?
- (A) The heart (B) The lung (C) The kidney (D) The liver
- Q42. Which food gives us the most energy?
- (A) Water (B) Minerals
(C) Vitamins (D) Carbohydrates
- Q43. 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 Earth stops rotating (D) The Moon comes between the Earth and the Sun
- Q44. How many bones does an adult human body have?
- (A) 201 (B) 206 (C) 212 (D) 300
- Q45. How many atoms of oxygen are there in one molecule of carbon dioxide?
- (A) Three (B) Two (C) One (D) Four

Achievers Section

5 questions · 3 marks each · 15 marks

- Q46. The clock in the figure shows 11:30. What is the angle between the hour hand and the minute hand?



- (A) 195° (B) 180° (C) 150° (D) 165°
- Q47. Rahul finished the puzzle in two minutes and said it was 'once in a blue moon'. What did he mean?
- (A) very often (B) very rarely (C) at sunrise (D) every night

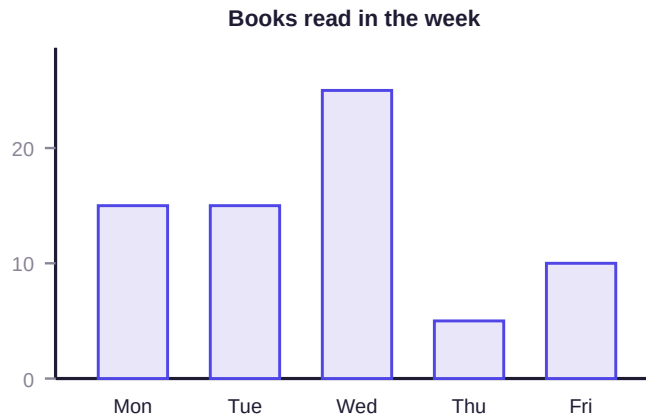
Q48. A file is 2 megabytes. Roughly how many kilobytes is that?

- (A) About 20 KB (B) About 2,000 KB
(C) About 2 KB (D) About 200 KB

Q49. Using each of the digits 1, 7, 3, 0 exactly once, what is the smallest 4-digit number that can be formed?

- (A) 1046 (B) 1037 (C) 0137 (D) 7310

Q50. The bar graph shows the number of books read by a class on each day of one week. How many books were read in the whole week?



- (A) 65 (B) 70 (C) 80 (D) 75

Answer Key

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

Solutions

Q1. (B) 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.

Q2. (C) From “All roses are flowers. All flowers need water.” it follows necessarily that all roses need water.

Q3. (B) The second word relates to the first in the same way School relates to Teacher.

Q4. (C) Counting Deep only once: $10 + 4 - 1 = 13$ people.

- Q5. (A) The two 9 m walks (north, then south) cancel out, leaving only the 3 m walked towards the east. So the answer is 3 m, East.
- Q6. (B) Position from the right = total - position from the left + 1 = $33 - 4 + 1 = 30$ th.
- Q7. (B) Subtracting 3 from 12 gives 9.
- Q8. (C) Counting lines of symmetry: square has 4, regular pentagon has 5, regular hexagon has 6, rectangle has 2. The answer is figure (C).
- Q9. (A) Each number is doubled and 1 is added: $23 \times 2 + 1 = 47$.
- Q10. (A) Each letter moves 4 place(s) forward in the alphabet, so after N comes R.
- Q11. (D) Greenhouse gases such as carbon dioxide trap heat and warm the planet. The answer is Excess carbon dioxide in the atmosphere.
- Q12. (D) Animals such as owls and bats that are active at night are called nocturnal. The answer is Nocturnal animals.
- Q13. (A) Stomata are small openings on the leaf surface for gas exchange.
- Q14. (B) Mercury is the closest planet to the Sun.
- Q15. (A) Iron rusts when it is exposed to both oxygen and moisture. The answer is Oxygen and water.
- Q16. (D) A water molecule has two hydrogen atoms and one oxygen atom: H_2O .
- Q17. (D) Respiration uses oxygen and releases carbon dioxide.
- Q18. (B) The Moon is the Earth's only natural satellite.
- Q19. (D) A stretched band stores elastic potential energy.
- Q20. (A) Metals such as copper conduct electricity; rubber, wood and plastic are insulators.
- Q21. (B) The Earth's axis is tilted, so different parts get more direct sunlight at different times of the year. The answer is The tilt of the Earth as it orbits the Sun.
- Q22. (B) A see-saw is a lever balancing on a pivot called the fulcrum.
- Q23. (A) Normal human body temperature is about 37°C (98.6°F).
- Q24. (C) Chlorophyll gives leaves their green colour and traps sunlight for photosynthesis.
- Q25. (D) The ozone layer absorbs most of the Sun's harmful ultraviolet radiation.
- Q26. (A) Force is measured in newtons (N).
- Q27. (C) Heating the water away leaves the salt behind - this is evaporation.
- Q28. (B) Magnets attract iron, nickel and cobalt. Glass, paper and cloth are not magnetic.
- Q29. (D) Photosynthesis makes glucose from carbon dioxide and water using sunlight.
- Q30. (D) Scurvy is caused by a lack of vitamin C, found in citrus fruits and amla.
- Q31. (D) Melting changes only the state, not the substance, so it is a physical change. The answer is Melting of ice.
- Q32. (A) Light travels fastest in a vacuum and slows down in denser media.
- Q33. (D) Transpiration is the loss of water vapour through the stomata.
- Q34. (A) Common salt is sodium chloride, $NaCl$.
- Q35. (A) Root hairs greatly increase the surface for absorbing water and minerals. The answer is To absorb water and minerals.
- Q36. (D) After fertilisation the ovary of the flower grows into the fruit.
- Q37. (B) A bulb takes in electrical energy and gives out light and heat. The answer is An electric bulb.
- Q38. (B) Water vapour cools and condenses into tiny droplets, forming clouds. The answer is Condensation.
- Q39. (D) Air is a mixture of gases that keep their own properties.
- Q40. (C) Sound needs a medium to travel, so it cannot pass through a vacuum.
- Q41. (C) The kidneys filter the blood and produce urine.
- Q42. (D) Carbohydrates such as rice, wheat and potato are the body's main energy food.

- Q43. (D) 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.
- Q44. (B) An adult skeleton has 206 bones; a baby is born with about 300, which later fuse.
- Q45. (B) Carbon dioxide is CO_2 , so it has two oxygen atoms.
- Q46. (D) The minute hand is at 180° from 12 and the hour hand at 345° from 12, so the angle between them is 165° .
- Q47. (B) In this sentence 'once in a blue moon' means very rarely.
- Q48. (B) 1 megabyte is about 1,000 kilobytes, so 2 MB is about 2,000 KB.
- Q49. (B) A 4-digit number cannot begin with 0, so the smallest possible first digit is 1. The remaining digits are then placed in increasing order: 1037.
- Q50. (B) $15 + 15 + 25 + 5 + 10 = 70$ books.

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