

Class 10 · 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. Count backward in 3s: 36, 33, 30, 27, ____

- (A) 25 (B) 24 (C) 27 (D) 21

Q2. Find the next number in the pattern: 27, 31, 35, 39, ____

- (A) 39 (B) 44 (C) 43 (D) 47

Q3. Which one does NOT belong with the others?

- (A) April (B) August (C) March (D) July

Q4. In a queue, Suresh is 8th from the front and 10th from the back. How many people are in the queue altogether?

- (A) 19 (B) 16 (C) 17 (D) 18

Q5. Which letter comes next? C, F, I, L, ____

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

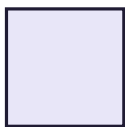
Q6. If the 10th of a month is a Friday, what day of the week is the 21th of the same month?

- (A) Thursday (B) Wednesday (C) Monday (D) Tuesday

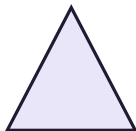
Q7. Sima walks 4 m north, then 9 m east, then 2 m south. Where is Sima now, relative to the starting point?

- (A) 2 m north and 9 m east (B) 3 m north and 9 m east
(C) 2 m north and 10 m east (D) 4 m north and 9 m east

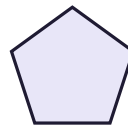
Q8. Which of these figures has exactly 6 lines of symmetry?



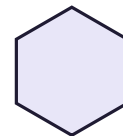
(A)



(B)



(C)



(D)

Q9. 7 : 49 :: 10 : ____

- (A) 81 (B) 121 (C) 100 (D) 20

Q10. Hunger : Food :: Thirst : ____

- (A) Sleep (B) Water (C) Air (D) Shade

Q11. Which part of the cell controls its activities?

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

Q12. Which layer of the atmosphere protects us from harmful ultraviolet rays?

- (A) The exosphere
- (B) The magnetosphere
- (C) The troposphere
- (D) The ozone layer

Q13. What colour does blue litmus paper turn in an acid?

- (A) Green
- (B) Red
- (C) It stays blue
- (D) Yellow

Q14. Two objects of different masses are dropped in a vacuum. Which lands first?

- (A) Neither falls in a vacuum
- (B) They land together
- (C) The heavier one
- (D) The lighter one

Q15. What is the basic unit of life?

- (A) The atom
- (B) The organ
- (C) The cell
- (D) The tissue

Q16. Which of these is a mixture and not a compound?

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

Q17. Which gas makes up most of the air around us?

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

Q18. What is the SI unit of energy?

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

Q19. Which food gives us the most energy?

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

Q20. Rusting of iron needs which two things?

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

Q21. Which blood cells help fight infection?

- (A) Plasma
- (B) Platelets
- (C) Red blood cells
- (D) White blood cells

Q22. Which part of the plant carries water from the roots to the leaves?

- (A) The cuticle
- (B) The phloem
- (C) The xylem
- (D) The stomata

- Q23. Sound cannot travel through which of these?
 (A) Steel (B) Water (C) Vacuum (D) Air
- Q24. What is the acceleration due to gravity on Earth, approximately?
 (A) About 3.7 m/s^2 (B) About 1.6 m/s^2
 (C) About 98 m/s^2 (D) About 9.8 m/s^2
- Q25. Which part of the plant develops into a fruit?
 (A) The petal (B) The ovary (C) The stamen (D) The sepal
- Q26. An echo is caused by:
 (A) Absorption of sound (B) Reflection of sound
 (C) Dispersion of sound (D) Refraction of sound
- Q27. At what temperature does water boil at normal pressure?
 (A) 212°C (B) 50°C (C) 0°C (D) 100°C
- Q28. Through which tiny pores do leaves exchange gases?
 (A) Roots (B) Stomata (C) Petals (D) Veins
- Q29. What is the unit of force?
 (A) Watt (B) Newton (C) Joule (D) Pascal
- Q30. Which process do green plants use to make their own food?
 (A) Digestion (B) Respiration
 (C) Transpiration (D) Photosynthesis
- Q31. How many bones does an adult human body have?
 (A) 206 (B) 212 (C) 300 (D) 201
- Q32. Which gas is produced when an acid reacts with a metal?
 (A) Oxygen (B) Hydrogen (C) Chlorine (D) Nitrogen
- Q33. Green colour in leaves is due to which pigment?
 (A) Carotene (B) Melanin (C) Haemoglobin (D) Chlorophyll
- Q34. Which mirror is used as a rear-view mirror in vehicles?
 (A) A cylindrical lens (B) A concave mirror
 (C) A convex mirror (D) A plane mirror
- Q35. Which of these is a renewable source of energy?
 (A) Solar energy (B) Coal (C) Diesel (D) Petrol
- Q36. What is the normal body temperature of a healthy human?
 (A) About 25°C (B) About 37°C (C) About 30°C (D) About 42°C
- Q37. Which is the smallest particle of an element that can take part in a reaction?
 (A) Molecule (B) Cell (C) Atom (D) Crystal
- Q38. Which blood group is called the universal donor?
 (A) A positive (B) AB positive (C) O negative (D) B negative

Q39. Which gas do plants take in during photosynthesis?

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

Q40. Which device converts electrical energy into light energy?

- (A) A battery (B) A microphone
(C) An electric bulb (D) A dynamo

Q41. Which planet is known as the Red Planet?

- (A) Mars (B) Jupiter (C) Venus (D) Saturn

Q42. Which gas do living things release during respiration?

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

Q43. Which vitamin do we get from sunlight?

- (A) Vitamin C (B) Vitamin K (C) Vitamin A (D) Vitamin D

Q44. What is the SI unit of power?

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

Q45. Which of these is a good conductor of electricity?

- (A) Copper (B) Plastic (C) Rubber (D) Wood

Achievers Section

5 questions · 3 marks each · 15 marks

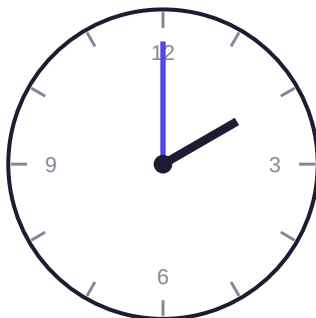
Q46. Using each of the digits 7, 0, 9, 6 exactly once, what is the smallest 4-digit number that can be formed?

- (A) 9760 (B) 0679 (C) 6088 (D) 6079

Q47. Rahul finished the puzzle in two minutes and said it was 'to burn the midnight oil'. What did he mean?

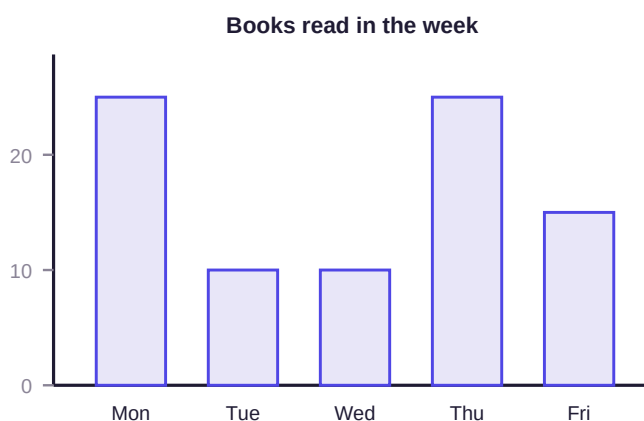
- (A) to fall asleep (B) to waste money
(C) to work late into the night (D) to cook dinner

Q48. The clock in the figure shows 2:00. What is the angle between the hour hand and the minute hand?



- (A) 45° (B) 60° (C) 75° (D) 90°

Q49. 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) 90 (B) 95 (C) 80 (D) 85

Q50. If LAMP is coded as QFRU, how is WIND coded?

- (A) GSXN (B) ISNB (C) BNSI (D) RDIY

Answer Key

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

Solutions

Q1. (B) Subtracting 3 from 27 gives 24.

Q2. (C) Each number is 4 more than the one before it, so the next is $39 + 4 = 43$.

Q3. (A) April has 30 days while the others have 31.

Q4. (C) Counting Suresh only once: $8 + 10 - 1 = 17$ people.

Q5. (C) Each letter moves 3 place(s) forward in the alphabet, so after L comes O.

Q6. (D) 11 days later is 1 week(s) and 4 day(s), so the day moves 4 place(s) on from Friday to Tuesday.

Q7. (A) The 2 m south cancels part of the 4 m north, leaving $4 - 2 = 2$ m north, and the 9 m east is unchanged. So Sima is 2 m north and 9 m east.

Q8. (D) Counting lines of symmetry: square has 4, equilateral triangle has 3, regular pentagon has 5, regular hexagon has 6. The answer is figure (D).

Q9. (C) The second number is the first multiplied by itself: $7 \times 7 = 49$, so $10 \times 10 = 100$.

- Q10. (B) The second word relates to the first in the same way Water relates to Thirst.
- Q11. (C) The nucleus is the control centre of the cell.
- Q12. (D) The ozone layer absorbs most of the Sun's harmful ultraviolet radiation.
- Q13. (B) Acids turn blue litmus red; bases turn red litmus blue.
- Q14. (B) With no air resistance all objects fall with the same acceleration. The answer is They land together.
- Q15. (C) Every living thing is made of cells, the basic unit of life. The answer is The cell.
- Q16. (A) Air is a mixture of gases that keep their own properties.
- Q17. (D) Air is about 78% nitrogen and about 21% oxygen.
- Q18. (C) Energy and work are measured in joules (J).
- Q19. (B) Carbohydrates such as rice, wheat and potato are the body's main energy food.
- Q20. (A) Iron rusts when it is exposed to both oxygen and moisture. The answer is Oxygen and water.
- Q21. (D) White blood cells defend the body against germs.
- Q22. (C) Xylem tissue carries water upwards; phloem carries food. The answer is The xylem.
- Q23. (C) Sound needs a medium to travel, so it cannot pass through a vacuum.
- Q24. (D) On Earth g is about 9.8 metres per second squared. The answer is About 9.8 m/s².
- Q25. (B) After fertilisation the ovary of the flower grows into the fruit.
- Q26. (B) Sound bouncing back off a surface produces an echo. The answer is Reflection of sound.
- Q27. (D) Water boils at 100°C at normal atmospheric pressure.
- Q28. (B) Stomata are small openings on the leaf surface for gas exchange.
- Q29. (B) Force is measured in newtons (N).
- Q30. (D) Photosynthesis makes glucose from carbon dioxide and water using sunlight.
- Q31. (A) An adult skeleton has 206 bones; a baby is born with about 300, which later fuse.
- Q32. (B) Acid plus metal gives a salt and hydrogen gas.
- Q33. (D) Chlorophyll gives leaves their green colour and traps sunlight for photosynthesis.
- Q34. (C) A convex mirror gives a wider field of view, so it is used as a rear-view mirror.
- Q35. (A) Sunlight is renewable; coal, petrol and diesel are fossil fuels that run out. The answer is Solar energy.
- Q36. (B) Normal human body temperature is about 37°C (98.6°F).
- Q37. (C) An atom is the smallest particle of an element that takes part in a chemical change.
- Q38. (C) O negative blood can be given to almost anyone, so it is the universal donor.
- Q39. (A) Plants take in carbon dioxide and release oxygen during photosynthesis.
- Q40. (C) A bulb takes in electrical energy and gives out light and heat. The answer is An electric bulb.
- Q41. (A) Mars looks red because of the iron oxide dust on its surface.
- Q42. (A) Respiration uses oxygen and releases carbon dioxide.
- Q43. (D) Our skin makes vitamin D when sunlight falls on it; it helps build strong bones.
- Q44. (B) Power is the rate of doing work, measured in watts.
- Q45. (A) Metals such as copper conduct electricity; rubber, wood and plastic are insulators.
- Q46. (D) A 4-digit number cannot begin with 0, so the smallest possible first digit is 6. The remaining digits are then placed in increasing order: 6079.
- Q47. (C) In this sentence 'to burn the midnight oil' means to work late into the night.
- Q48. (B) The minute hand is at 0° from 12 and the hour hand at 60° from 12, so the angle between them is 60°.
- Q49. (D) $25 + 10 + 10 + 25 + 15 = 85$ books.
- Q50. (C) Every letter moves 5 place(s) forward, so WIND becomes BNSI.

