STUDENT COPY · SET B

Class 10 · Science Olympiad

Total questions	Total marks	Time	Negative marking
50	60	60 minutes	None

Name: _____ Class/Section: _____ Roll no: _____

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. Your teacher has the answers.
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Logical Reasoning

10 questions · 1 mark each · 10 marks

Q1. In the first row the numbers are 8, 3 and 23. In the second row they are 9, 2 and 17. In the third row they are 8, 4 and ___ . The same rule applies to every row.

(A) 30 (B) 33 (C) 31 (D) 32

Q2. Find the next number in the pattern: 4, 11, 25, 53, ___

(A) 106 (B) 107 (C) 112 (D) 109

Q3. Sima walks 9 m north, then 6 m east, then 7 m south. Where is Sima now, relative to the starting point?

(A) 2 m north and 7 m east
(B) 3 m north and 6 m east
(C) 2 m north and 6 m east
(D) 9 m north and 6 m east

Q4. All but one of these numbers are multiples of the same number. Find the one that is not: 21, 28, 49, 64, 70

(A) 28 (B) 70 (C) 64 (D) 21

Q5. In a certain code TIN is written as XMR. How is SUN written in that code?

(A) XZS (B) OQJ (C) WYR (D) RYW

Q6. If TIN is written as 20 - 9 - 14 using the positions of the letters in the alphabet, how is SUN written?

(A) 20 - 22 - 15 (B) 8 - 6 - 13 (C) 19 - 21 - 14 (D) 14 - 21 - 19

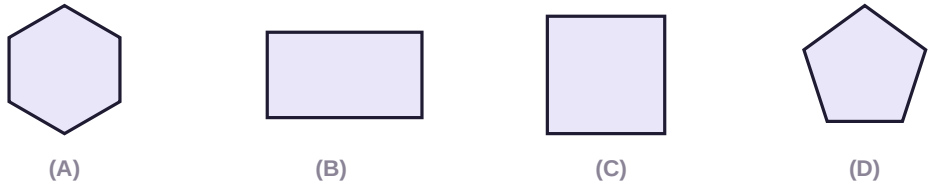
Q7. Which letter comes next? G, I, L, P, ___

(A) T (B) S (C) U (D) V

Q8. 11 : 121 :: 10 : ___

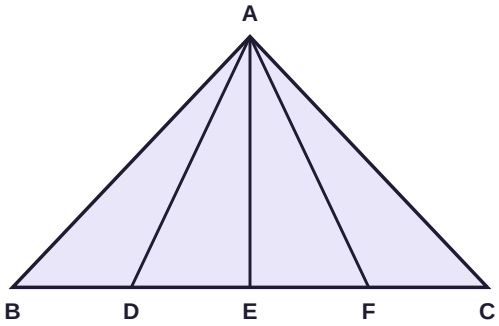
(A) 121 (B) 100 (C) 81 (D) 20

Q9. Which of these figures has exactly 2 lines of symmetry?



(A) (B) (C) (D)

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



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

Science

35 questions · 1 mark each · 35 marks

Q11. Two 5 ohm resistors are connected to the same cell first in series, then in parallel. When is compass deflection near the wire larger?

(A) Same in both connections (B) Only with reversed cell

(C) Series connection (D) Parallel connection

Q12. Which vitamin does our skin make when sunlight falls on it?

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

Q13. A 4 Ω and an 8 Ω resistor are connected in parallel to the same cell. Which statement is correct?

(A) 8 Ω carries twice the current (B) Both carry equal current

(C) 4 Ω has half the voltage (D) 4 Ω carries twice the current

Q14. Which part of the human eye controls how much light enters?

(A) The optic nerve (B) The iris

(C) The cornea (D) The retina

Q15. Strips of Cu, Zn, Fe and Ag are separately dipped in CuSO4 solution. Which pair will get a brown copper coating?

(A) Iron and copper (B) Zinc and silver

(C) Copper and silver (D) Zinc and iron

Q16. A potted plant bends toward a window. If only the shoot tip is covered by an opaque cap, what will happen?

(A) Root bends toward the light (B) Bending toward light increases

(C) Bending away from light occurs (D) No clear bending occurs

Q17. A shiny metal X dipped in green FeSO4 shows no change, but dipped in blue CuSO4 gets a reddish coat. Which metal can X be?

(A) Copper (B) Iron (C) Zinc (D) Silver

Q18. Which organ removes waste from the blood and makes urine?

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

Q19. Which of these is an acid?

(A) Soap solution (B) Baking soda solution

(C) Lime water (D) Lemon juice

Q20. Which of these is a physical change?

(A) Rusting of iron (B) Burning of paper

(C) Melting of ice (D) Cooking of food

Q21. Which gas do living things release during respiration?

(A) Carbon dioxide (B) Oxygen

(C) Nitrogen (D) Hydrogen

Q22. What is the SI unit of energy?

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

Q23. Which of these is a good conductor of electricity?

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

Q24. What is the chemical formula of water?

(A) H2O (B) O2 (C) CO2 (D) NaCl

Q25. Through which tiny pores do leaves exchange gases?

(A) Petals (B) Veins (C) Stomata (D) Roots

Q26. What colour does blue litmus paper turn in an acid?

(A) It stays blue (B) Green

(C) Red (D) Yellow

Q27. Which process do green plants use to make their own food?

(A) Transpiration (B) Respiration

(C) Digestion (D) Photosynthesis

Q28. Which blood group is called the universal donor?

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

Q29. Which layer of the atmosphere protects us from harmful ultraviolet rays?

(A) The troposphere (B) The magnetosphere

(C) The exosphere (D) The ozone layer

Q30. Which force pulls objects towards the Earth?

(A) Pressure (B) Gravity (C) Magnetism (D) Friction

Q31. Loss of water vapour from the leaves of a plant is called:

(A) Transpiration (B) Respiration

(C) Condensation (D) Germination

Q32. Which blood cells help fight infection?

(A) White blood cells (B) Platelets

(C) Red blood cells (D) Plasma

Q33. How many atoms of oxygen are there in one molecule of carbon dioxide?

(A) One (B) Two (C) Four (D) Three

Q34. Which gas makes up most of the air around us?

(A) Hydrogen (B) Oxygen

(C) Carbon dioxide (D) Nitrogen

Q35. What is the pH value of a neutral solution?

(A) 7 (B) 14 (C) 10 (D) 0

Q36. Which of these is a mixture and not a compound?

(A) Air (B) Water

(C) Carbon dioxide (D) Common salt

Q37. Which colour of white light bends the most when passing through a prism?

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

Q38. What is the basic unit of life?

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

Q39. Light travels fastest through which of these?

(A) Vacuum (B) Water (C) Air (D) Glass

Q40. What kind of energy is stored in a stretched rubber band?

(A) Potential energy (B) Sound energy

(C) Light energy (D) Kinetic energy

Q41. Which gas is produced when an acid reacts with a metal?

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

Q42. Common salt is chemically known as:

(A) Sodium bicarbonate (B) Calcium carbonate

(C) Potassium nitrate (D) Sodium chloride

Q43. Sound cannot travel through which of these?

(A) Vacuum (B) Water (C) Air (D) Steel

Q44. What is the acceleration due to gravity on Earth, approximately?

(A) About 1.6 m/s² (B) About 3.7 m/s²

(C) About 9.8 m/s² (D) About 98 m/s²

Q45. Which device converts electrical energy into light energy?

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

Achievers Section

5 questions · 3 marks each · 15 marks

Q46. An unknown carbon compound burns with a smoky flame and quickly decolourises bromine water. Which compound is most likely?

(A) ethane
(B) ethanoic acid
(C) ethene
(D) ethanol

Q47. In a young tree, a complete ring of bark is removed but wood is not cut. After some days, which part is first deprived of food and why?

(A) roots, because xylem is cut
(B) leaves, because xylem is cut
(C) leaves, because phloem is cut
(D) roots, because phloem is cut

Q48. A tall pea plant known to be heterozygous is crossed with a dwarf pea plant. Among many offspring, which result is expected?

(A) three tall for every one dwarf
(B) about half tall and half dwarf
(C) all plants are tall
(D) all plants are dwarf

Q49. Two identical glasses hold water at 10°C and at 80°C. In which glass will a sugar cube dissolve faster?

(A) Both at the same speed
(B) Neither will dissolve
(C) The glass at 10°C
(D) The glass at 80°C

Q50. A convex lens makes a sharp inverted image of a window on a screen. If the upper half of the lens is covered, what is seen on the screen?

(A) Complete image, but dimmer
(B) Complete image, but erect
(C) Only lower half of image
(D) Only upper half of image

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