SCO INTERNATIONAL OLYMPIAD

CLASS 6 SAMPLE PAPER

Sample Question Paper | Set A | Answer Key and Explanations

Designed from Class 6 Science learning pathways and aligned with SCO's platform flow for guided preparation, practice, reporting, and future-ready academic growth.

- age-fit science reasoning for Class 6 / upper-primary learners globally
- question blocks with clean options, answer keys, and explanations for concept clarity
- structured practice across life science, physical science, earth science, environment, and scientific method

Maths	English	Science	Mental Ability	Finance Knowledge
AI	Entrepreneurship	GK	Coding	Life Skills

SCO International Science Olympiad - Class 6

Sample Question Paper | Set A | Answer Key and Explanations

Exam Name	SCO International Science Olympiad	**Class**	Class 6
Question Paper Set	Sample A	**Duration**	60 minutes
Total Questions	50	**Question Type**	Objective Type
Candidate Name	_____	**Registration ID**	_____

Guidelines for the Candidate

1. Before the exam begins, candidates may use the additional time given by the invigilator to complete OMR/personal details carefully.
2. Write name, school code, class, roll number, registration ID, and contact number clearly where required.
3. Total Questions: 50. Each question has only one correct answer unless explicitly stated otherwise.
4. All questions are compulsory. There is no negative marking in this sample/official practice paper format.
5. Calculator use is not allowed unless the official exam instructions specifically permit it.
6. Use only an HB pencil or a blue/black ballpoint pen to darken the correct option on the answer sheet.
7. At the end of the test, hand over the answer sheet to the invigilator.

Section A - General Science

Q.1 Which material allows the least heat to pass through it?

A) Copper
B) Wool
C) Glass
D) Iron

Answer: B

Explanation: Wool is a poor conductor of heat compared to metals like copper and iron.

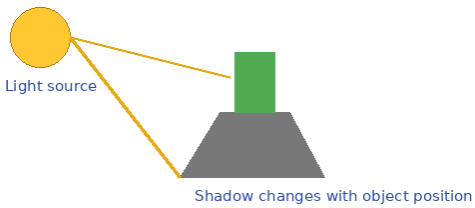
Q.2 A ball is thrown upward with a speed of 20 m/s. How long will it take for the ball to reach its maximum height? (Assume g = 10 m/s^2)

A) 2 seconds
B) 1 second
C) 4 seconds
D) 5 seconds

Answer: A

Explanation: Time = velocity / acceleration, so 20 m/s ÷ 10 m/s^2 = 2 seconds.

Q.3 If a shadow is cast to the west in the morning, in which direction will the shadow be cast in the evening?



A) North
B) East
C) South
D) West

Answer: B

Explanation: In the evening, the Sun is in the west, so shadows fall to the east.

Q.4 Which of the following forces causes an object to move in a circular path?

A) Gravitational force
B) Magnetic force
C) Frictional force
D) Centripetal force

Answer: D

Explanation: Centripetal force keeps objects moving in a circular path.

Q.5 If a pendulum swings once every 2 seconds, what is its frequency?

A) 0.5 Hz
B) 2 Hz
C) 4 Hz
D) 1 Hz

Answer: A

Explanation: Frequency = 1/Time, so 1/2 seconds = 0.5 Hz.

Q.6 Which of the following substances can undergo sublimation?

A) Salt
B) Ice
C) Naphthalene
D) Sand

Answer: C

Explanation: Naphthalene undergoes sublimation, turning from solid to gas directly.

Q.7 If 5 grams of salt is dissolved in 100 ml of water, what is the resulting solution called?

A) Homogeneous mixture
B) Heterogeneous mixture
C) Suspension
D) Compound

Answer: A

Explanation: The resulting solution is a homogeneous mixture as the salt dissolves evenly in water.

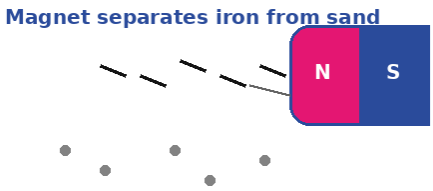
Q.8 Which gas is produced when magnesium reacts with hydrochloric acid?

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

Answer: C

Explanation: Magnesium reacts with hydrochloric acid to produce hydrogen gas.

Q.9 Which method would you use to separate a mixture of iron filings and sand?



A) Filtration
B) Decantation
C) Magnetic separation
D) Evaporation

Answer: C

Explanation: Magnetic separation can be used to separate iron filings from sand due to their magnetic property.

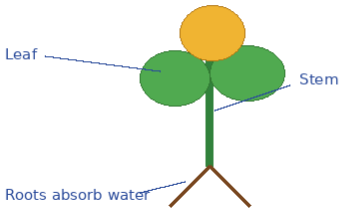
Q.10 What happens to the boiling point of water when salt is added?

A) Increases
B) Decreases
C) Remains the same
D) Changes depending on temperature

Answer: A

Explanation: Adding salt increases the boiling point of water, a phenomenon known as boiling point elevation.

Q.11 Which part of a plant is responsible for absorbing water from the soil?



A) Stem
B) Leaves
C) Roots
D) Flowers

Answer: C

Explanation: Roots absorb water and minerals from the soil, essential for plant growth.

Q.12 Which type of reproduction occurs without the fusion of gametes?

A) Sexual reproduction
B) Binary fission
C) Budding
D) Asexual reproduction

Answer: D

Explanation: Asexual reproduction occurs without the fusion of gametes.

Q.13 What is the main function of red blood cells?

A) To carry nutrients
B) To fight infections
C) To transport oxygen
D) To maintain body temperature

Answer: C

Explanation: Red blood cells transport oxygen from the lungs to other parts of the body.

Q.14 How do fish breathe?

A) Through lungs
B) Through gills
C) Through skin
D) By swallowing water

Answer: B

Explanation: Fish use gills to extract oxygen from water.

Q.15 Which plant hormone is responsible for growth towards light?

A) Auxin
B) Cytokinin
C) Gibberellin
D) Ethylene

Answer: A

Explanation: Auxin is responsible for phototropism, which causes a plant to grow towards light.

Q.16 Which planet has the longest day in the solar system?

A) Venus
B) Earth
C) Mars
D) Jupiter

Answer: A

Explanation: Venus has the longest rotation period, making its day the longest.

Q.17 What causes a solar eclipse?

A) The Earth moves between the Sun and the Moon
B) The Moon moves between the Earth and the Sun
C) The Sun moves between the Moon and Earth
D) None of the above

Answer: B

Explanation: A solar eclipse occurs when the Moon moves between the Earth and the Sun.

Q.18 Which layer of the Earth's atmosphere contains the ozone layer?

A) Troposphere
B) Mesosphere
C) Stratosphere
D) Thermosphere

Answer: C

Explanation: The ozone layer is found in the stratosphere.

Q.19 Which type of star is our Sun?

A) Red giant
B) White dwarf
C) Main sequence
D) Neutron star

Answer: C

Explanation: The Sun is a main-sequence star, which is the most common type of star in the universe.

Q.20 What is the speed of light in a vacuum?

A) 300,000 km/s
B) 150,000 km/s
C) 100,000 km/s
D) 30,000 km/s

Answer: A

Explanation: The speed of light in a vacuum is approximately 300,000 km/s.

Section B - Case Study and Application-Based Science

Q.21 What is the main cause of earthquakes?

A) Weather changes
B) Volcanic eruptions
C) Movement of tectonic plates
D) Ocean currents

Answer: C

Explanation: Earthquakes are caused by the movement of tectonic plates along fault lines.

Q.22 Which rock is formed from cooled lava?

A) Metamorphic
B) Sedimentary

C) Igneous
D) Organic

Answer: C

Explanation: Igneous rocks are formed from cooled and solidified lava or magma.

Q.23 What is the process called when rocks break down due to wind, water, or ice?

A) Erosion
B) Weathering
C) Sedimentation
D) Fossilization

Answer: B

Explanation: Weathering is the process of breaking down rocks through natural forces such as wind or water.

Q.24 Which layer of Earth is composed primarily of liquid iron and nickel?

A) Crust
B) Mantle
C) Outer core
D) Inner core

Answer: C

Explanation: The outer core is composed of liquid iron and nickel.

Q.25 Which gas is the most abundant in the Earth's atmosphere?

A) Oxygen
B) Nitrogen
C) Carbon dioxide
D) Argon

Answer: B

Explanation: Nitrogen makes up about 78% of the Earth's atmosphere.

Q.26 What is the primary source of energy for the Earth's climate system?

A) Geothermal energy
B) Ocean currents

C) The Sun

D) Wind

Answer: C

Explanation: The Sun is the primary source of energy for Earth's climate system.

Q.27 Which form of water pollution is caused by fertilizers?

A) Plastic waste

B) Eutrophication

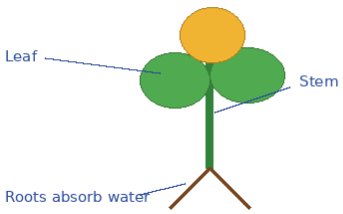
C) Acid rain

D) Oil spills

Answer: B

Explanation: Eutrophication is caused by nutrient pollution, such as fertilizers, leading to water pollution.

Q.28 What is the process by which plants absorb carbon dioxide and release oxygen?



A) Respiration

B) Transpiration

C) Photosynthesis

D) Evaporation

Answer: C

Explanation: Photosynthesis is the process by which plants convert carbon dioxide and water into oxygen.

Q.29 What is the term for species that are at risk of extinction?

A) Endangered

B) Vulnerable

C) Threatened

D) Extinct

Answer: A

Explanation: Endangered species are at risk of extinction due to factors like habitat loss and climate change.

Q.30 Which of the following gases is a greenhouse gas?

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

Answer: C

Explanation: Carbon dioxide is a greenhouse gas that contributes to the greenhouse effect.

Q.31 Which one of these is not a renewable energy source?

A) Wind energy
B) Solar energy
C) Nuclear energy
D) Hydropower

Answer: C

Explanation: Nuclear energy is not considered renewable, as it relies on finite resources like uranium.

Q.32 Which organ in the human body filters blood to remove waste products?

A) Heart
B) Kidneys
C) Liver
D) Lungs

Answer: B

Explanation: The kidneys filter blood to remove waste products and excess substances.

Q.33 What type of lens is used to correct farsightedness?

A) Convex lens
B) Concave lens
C) Bifocal lens
D) Cylindrical lens

Answer: A

Explanation: A convex lens is used to correct farsightedness by converging light rays before they reach the eye.

Q.34 Which substance is known as the universal solvent?

A) Oil
B) Water
C) Alcohol
D) Mercury

Answer: B

Explanation: Water is known as the universal solvent because it can dissolve many substances.

Q.35 Which element is essential for the formation of chlorophyll in plants?

A) Calcium
B) Magnesium
C) Sodium
D) Phosphorus

Answer: B

Explanation: Magnesium is a key element in the chlorophyll molecule, which allows plants to perform photosynthesis.

Q.36 How many bones does an adult human body have?

A) 200
B) 206
C) 210
D) 212

Answer: B

Explanation: An adult human body typically has 206 bones.

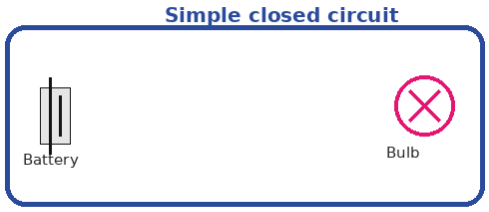
Q.37 What is the term for the amount of space an object occupies?

A) Mass
B) Volume
C) Density
D) Weight

Answer: B

Explanation: Volume refers to the amount of space an object occupies.

Q.38 Which type of simple machine is a seesaw?



A) Wheel and axle
B) Pulley
C) Lever
D) Inclined plane

Answer: C

Explanation: A seesaw functions as a lever, with the pivot point acting as the fulcrum.

Q.39 Which natural satellite orbits the Earth?

A) Mars
B) Moon
C) Phobos
D) Sun

Answer: B

Explanation: The Moon is Earth's natural satellite, orbiting the planet.

Q.40 How many planets are there in our solar system?

A) 7
B) 8
C) 9
D) 10

Answer: B

Explanation: There are 8 planets in our solar system following the reclassification of Pluto as a dwarf planet.

Section C - Reason and Assertion

Q.41 Assertion (A): Iron nails sink in water.

Reason (R): Iron has a higher density than water.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: A

Explanation: Both statements are true, and iron sinks because its density is indeed higher than water's.

Q.42 Assertion (A): Plants release carbon dioxide during photosynthesis.

Reason (R): Photosynthesis is the process by which plants convert sunlight, carbon dioxide, and water into glucose and oxygen.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: D

Explanation: Photosynthesis produces oxygen, not carbon dioxide; thus, Assertion is false while Reason is true.

Q.43 Assertion (A): An electric bulb glows brighter when the voltage is increased.

Reason (R): Increasing the voltage increases the resistance of the filament.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: C

Explanation: Increasing the voltage increases current, not resistance; hence, the Reason is incorrect.

Q.44 Assertion (A): Sound travels faster in air than in water.

Reason (R): Water molecules are more tightly packed than air molecules.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: D

Explanation: Sound travels faster in water due to the medium's density; thus, Assertion is false while Reason is correct.

Q.45 Assertion (A): Lunar eclipses are generally easier to observe from Earth than solar eclipses.

Reason (R): The Earth casts a larger shadow on the Moon than the Moon casts on the Earth.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: A

Explanation: Both statements are true in the context of observation from Earth: Earth casts a larger shadow on the Moon than the Moon casts on Earth, so lunar eclipses are visible over a wider region. The reason explains the assertion.

Q.46 Assertion (A): All metals are good conductors of electricity.

Reason (R): Metals have free electrons that help conduct electricity.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: A

Explanation: Both are true; metals conduct electricity due to free electrons aiding in the flow of current.

Q.47 Assertion (A): Hot air balloons rise because they are filled with warm air.

Reason (R): Warm air is less dense than cold air.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: A

Explanation: Warm air is indeed less dense, making the hot air balloon rise.

Q.48 Assertion (A): The boiling point of water is 100°C at sea level.

Reason (R): The boiling point of water decreases with increasing altitude.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: B

Explanation: Boiling point of water is indeed 100°C at sea level; Reason does not directly explain why, however.

Q.49 Assertion (A): The Moon produces its own light.

Reason (R): The Moon is visible because it reflects the light of the Sun.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: D

Explanation: The Moon does not emit light; it only reflects sunlight, making the Assertion incorrect.

Q.50 Assertion (A): Carbon dioxide is heavier than oxygen.

Reason (R): Carbon dioxide is composed of one carbon atom and two oxygen atoms, making it denser.

A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

Answer: A

Explanation: Both are true; CO_2 is indeed denser than oxygen because it contains more mass per molecule.

Consolidated Answer Key

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

Space for Rough Work