
IQNEXUS SCIENCE OLYMPIAD (IQSO) – CLASS 7

SAMPLE PAPER

Total Questions: 30

Total Marks: 100

Time: 1 Hour

Instructions:

All questions are compulsory.

STUDENT DETAILS (To be filled by the student)

Name: _____

Class: _____ Section: _____

Roll No.: _____

School Name: _____

SECTION 1: LOGICAL CHALLENGER (Science-Based Puzzles & Reasoning)

(5 Questions × 2 Marks = 10 Marks)

1. A scientist labels test tubes A, B, C, and D containing different clear liquids. The labels accidentally get removed. He adds phenolphthalein indicator to each. Only tube C turns pink. What can be concluded?

(A) Tube C contains an acid.

(B) Tube C contains a base.

(C) Tube C contains neutral water.

(D) Tube C contains an indicator.

2. Identify the odd one out based on scientific reasoning:

- (A) Oxygen
- (B) Hydrogen
- (C) Nitrogen
- (D) Copper

3. In a sequence of numbers representing the atomic numbers of elements: 2, 10, 18, __, 54. What should be the missing number?

- (A) 20
- (B) 36
- (C) 28
- (D) 40

4. A clock in a laboratory runs faster than normal time. Which factor can be affecting it?

- (A) High humidity
- (B) Low temperature
- (C) Strong magnetic field
- (D) Low air pressure

5. If 'A' represents a virus, 'B' a bacterium, 'C' a fungi, and 'D' a protozoan, which among them can reproduce only inside a host cell?

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

SECTION 2: CORE SCIENCE (Physics, Chemistry, Biology)

(15 Questions × 3 Marks = 45 Marks)

6. Which of the following materials is the best conductor of electricity?

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

7. Which law states that pressure applied to a confined fluid is transmitted equally in all directions?

- (A) Newton's First Law
- (B) Archimedes' Principle
- (C) Pascal's Law
- (D) Bernoulli's Principle

8. Which of the following is an example of a chemical change?

- (A) Melting of ice
- (B) Rusting of iron
- (C) Breaking of glass
- (D) Boiling of water

9. Which part of the human digestive system absorbs the most nutrients?

- (A) Stomach
- (B) Large Intestine
- (C) Small Intestine
- (D) Liver

10. What is the function of ribosomes in a cell?

- (A) Energy production
- (B) Protein synthesis
- (C) DNA storage
- (D) Waste removal

11. The SI unit of electric current is:

- (A) Ampere
- (B) Watt
- (C) Joule
- (D) Ohm

12. Which among the following is a renewable source of energy?

- (A) Coal
- (B) Natural Gas
- (C) Solar Power
- (D) Petroleum

13. What will happen if a green plant is kept in a room with only green light?

- (A) It will photosynthesize faster
- (B) It will stop photosynthesizing
- (C) It will absorb more carbon dioxide
- (D) It will become healthier

14. Which gas is produced during photosynthesis?

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

15. What type of friction is experienced when a car is moving at a constant speed on the road?

- (A) Static friction
- (B) Sliding friction
- (C) Rolling friction
- (D) Fluid friction

16. Which type of chemical reaction occurs when two or more substances combine to form a new compound?

- (A) Decomposition
- (B) Combustion
- (C) Combination
- (D) Displacement

17. Which blood component helps in clotting?

- (A) RBC
- (B) WBC
- (C) Platelets
- (D) Plasma

18. Which planet rotates in the opposite direction compared to most planets in the solar system?

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

19. The ability of a material to return to its original shape after stretching is called:

- (A) Hardness
- (B) Elasticity
- (C) Ductility
- (D) Brittleness

20. Which of the following is NOT a greenhouse gas?

- (A) Methane
- (B) Carbon Dioxide
- (C) Nitrogen
- (D) Water Vapor

SECTION 3: SCIENTIFIC APTITUDE (Application-based & Experimental Science)

(5 Questions × 5 Marks = 25 Marks)

21. Why do astronauts in space appear weightless?

- (A) There is no gravity in space
- (B) They are in free fall
- (C) They are far from Earth's gravity
- (D) They are floating due to zero air resistance

22. A metal rod is heated at one end. After some time, the other end also becomes hot. This is due to:

- (A) Convection
- (B) Radiation
- (C) Conduction
- (D) Reflection

23. A farmer wants to grow crops in an area with low water availability. Which irrigation technique should he use?

- (A) Sprinkler irrigation
- (B) Drip irrigation
- (C) Flood irrigation
- (D) Canal irrigation

24. A boy sees a flash of lightning and hears thunder 5 seconds later. If the speed of sound in air is 340 m/s, how far was the lightning strike?

- (A) 1.7 km
- (B) 5 km
- (C) 2.5 km
- (D) 3.4 km

25. A car engine converts chemical energy into:

- (A) Electrical energy
- (B) Sound energy
- (C) Heat and kinetic energy
- (D) Light energy

SECTION 4: HOTS (Higher Order Thinking Skills)

(5 Questions × 4 Marks = 20 Marks)

26. Why do astronauts wear specially designed space suits?

- (A) To look professional
- (B) To protect from space radiation
- (C) To keep their body warm
- (D) To help them breathe underwater

27. Why do fish die in polluted water bodies with high amounts of algae?

- (A) Algae consume all oxygen
- (B) Algae release toxic gases
- (C) Fish cannot eat algae
- (D) Algae block sunlight

28. Why do water droplets form on the outer surface of a cold water bottle?

- (A) Water leaks from the bottle
- (B) Condensation of atmospheric moisture
- (C) Water escapes through plastic
- (D) Evaporation of water inside the bottle

29. Why do astronauts experience a sunrise and sunset every 90 minutes in space?

- (A) The Sun moves faster in space
- (B) The Earth's rotation is faster

(C) The space station orbits the Earth rapidly

(D) The atmosphere is thinner in space

30. A scientist measures the pH of rainwater and finds it to be 5.6. What does this indicate?

(A) The rainwater is neutral

(B) The rainwater is acidic

(C) The rainwater is alkaline

(D) The rainwater is pure

Answer key:

SECTION 1: LOGICAL CHALLENGER

1. B

2. D

3. B

4. C

5. A

SECTION 2: CORE SCIENCE

6. C

7. C

8. B

9. C

10. B

11. A

12. C

13. B

14. A

15. C

16. C

17. C

18. B

19. B

20. C

SECTION 3: SCIENTIFIC APTITUDE

21. B

22. C

23. B

24. C

25. A

SECTION 4: HOTS

26. B

27. A

28. B

29. C

30. B