

Mindbenz Olympiad of Science (MOS)

Sample Paper

Class - 7

Maximum Marks: 60

Time Allowed – 55 Minutes

Section: A Concept Check (10 Questions × 1 mark = 10 marks)

1. Which graph represents uniform motion?

- A. Curved line
- B. Zig-zag line
- C. Straight line passing through the origin
- D. Horizontal line

2. Formation of curd from milk involves:

- A. Physical change only
- B. Both physical and chemical changes
- C. Chemical change only
- D. No change

3. Which is the correct order in wool production?

- A. Sorting → Shearing → Scouring → Spinning
- B. Shearing → Scouring → Sorting → Spinning
- C. Scouring → Shearing → Sorting → Spinning
- D. Shearing → Sorting → Scouring → Spinning



4. Which of the following will turn blue litmus red?

- A. Soap solution
- B. Vinegar
- C. Baking soda
- D. Lime water

5. Which organism prepares food by chemosynthesis?

- A. Algae
- B. Amoeba
- C. Bacteria near hydrothermal vents
- D. Fungi

6. The thermometer used to measure human body temperature is:

- A. Laboratory thermometer
- B. Alcohol thermometer
- C. Mercury thermometer



D. Clinical thermometer

7. Which effect of electric current causes a bulb to glow?

- A. Chemical effect
- B. Magnetic effect
- C. Heating effect
- D. None of these

8. During inhalation, the diaphragm:

- A. Contracts and moves down
- B. Relaxes and moves up
- C. Contracts and moves up
- D. Does not move

9. What is the full form of the instrument 'anemometer'?

- A. Measures wind speed
- B. Measures wind pressure
- C. Measures humidity
- D. Measures rain



10. Pollination by wind is called:

- A. Entomophily
- B. Anemophily
- C. Hydrophily
- D. Zoophily

Section: B Application Zone (10 Questions × 1 mark = 10 marks)

11. Which one of the following is a reversible change?

- A. Cooking of rice
- B. Dissolving sugar in water
- C. Rusting of iron
- D. Burning of paper

12. If a red blood cell is placed in a salt solution that is more concentrated than the cell's internal environment, it will:

- A) Swell and burst
- B) Stay the same
- C) Shrink due to water loss
- D) Multiply

13. A student tests a colorless solution with turmeric. It turns red. The solution is likely to be:

- A. Acidic
- B. Basic
- C. Neutral
- D. Salty

14. A plant shows no growth even in sunlight and water but lacks minerals. The plant is likely:

- A. Performing photosynthesis
- B. Undergoing dormancy
- C. Deficient in nutrients
- D. Parasitic

15. You touch two metal chairs, one in sun and one in shade. The sun-exposed one feels hot. Why?

- A. Metal absorbs water
- B. Metal is a poor conductor
- C. Metal conducts heat well
- D. It contains electricity

16. ASSERTION: A circuit with a gap will light a bulb.

REASON: Electric current requires a complete path to flow.

- 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.

17. Cyclones are formed due to:

- A. Uniform heating of land and water
- B. High pressure everywhere
- C. Uneven heating and pressure difference
- D. Earthquake



18. The image in a pinhole camera is:

- A. Virtual and inverted
- B. Real and inverted
- C. Real and erect
- D. Virtual and erect

19. Which of the following plants reproduces by spores?

- A. Mango
- B. Rose
- C. Fern
- D. Neem



20. Which is the best way to conserve water?

- A. Use sprinklers all day
- B. Use buckets instead of showers
- C. Leave taps open while brushing



D. Increase water flow

Section: C: Higher Order Thinking (20 Questions × 2 marks = 40 marks)

21. A train travels half the distance at 40 km/h and the remaining half at 60 km/h. What is the average speed?

- A. 48 km/h
- B. 50 km/h
- C. 49 km/h
- D. 52 km/h

22. Assertion: Boiling water leads to a chemical change.

REASON: Evaporation results in new substance formation.

- 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.

23. Silk obtained from different species of silkworms differs due to:

- A. Diet of larva
- B. Climate only
- C. Chemical treatment
- D. Processing method

24. Which of the following is amphoteric?

- A. NaCl
- B. H₂O
- C. NaOH
- D. HCl

25. What happens to the oscillation of a simple pendulum if it is taken to the Moon (with lower gravity)?

- A) Oscillates faster
- B) Oscillates slower
- C) No oscillation
- D) Breaks due to pressure

26. A bulb lights dimly in a circuit. What may be the reason?

- A. High voltage
- B. Thin wire offers more resistance
- C. Switch is broken
- D. Air leakage in the bulb

27. Assertion: Warm air rises and creates low pressure.

REASON: Low pressure pulls in cold air rapidly

- 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.

28. Which factor does NOT affect climate?

- A. Latitude
- B. Altitude
- C. Soil type
- D. Ocean currents



29. Which practice conserves fossil fuels?

- A. Car Pooling
- B. Burning garbage
- C. Open mining
- D. Wasting water

30. Vegetative propagation helps:

- A. Slow growth
- B. Variation
- C. Quick multiplication
- D. Seed dormancy



31. Why do metals feel colder than wood at room temperature?

- A) Metals have higher specific heat
- B) Metals conduct heat away faster from your hand
- C) Metals emit heat faster than wood
- D) Metals absorb less heat

32. A toy car drives 5 m east, then 5 m west, then 2 m north. What is the ratio of displacement to distance?

- A) 0:12
- B) 2:12
- C) 1:6
- D) 2:2

33. Which of the following is the correct reason for why copper is used as wiring material?

- A) High resistance and high cost
- B) High conductivity and ductility
- C) Low conductivity and brittle nature
- D) Low melting point and corrosion resistance

34. A ray of light travels from air to water. What happens to its speed and direction?

- A. Speed decreases and bends towards the normal
- B. Speed increases and bends away from the normal

- C. Speed decreases and bends away from the normal
- D. Speed increases and continues straight

35. Wastewater treatment primarily removes:

- A. Solids only
- B. Chemicals only
- C. Both solids and harmful chemicals
- D. None of the above

36. The volume of blood pumped by heart per beat is 70 mL. If heart beats 72 times per minute, what volume of blood is pumped in 1 minute?

- A. 5040 mL
- B. 4900 mL
- C. 5000 mL
- D. 4500 mL

37. A train accelerates uniformly from rest and covers 1 km in 50 seconds. What is its acceleration? (Use $s = ut + \frac{1}{2}at^2$)

- A. 0.8 m/s^2
- B. 0.4 m/s^2
- C. 0.5 m/s^2
- D. 0.6 m/s^2

38. Which of the following solutions will have the highest concentration of OH^- ions?

- A. 0.01 M HCl
- B. 0.01 M NaOH
- C. 0.001 M HCl
- D. 0.001 M NaOH

39. In which part of the plant does photosynthesis occur most actively?

- A. Xylem
- B. Phloem
- C. Chloroplasts in leaves
- D. Roots

40. During heavy exercise, which process increases to supply more oxygen to the muscles?

- A. Rate of photosynthesis
 - B. Rate of transpiration
 - C. Rate of breathing and heart rate
 - D. Rate of digestion
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ANSWER KEY

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