

**MID-TERM EXAMINATION — Class 8 Science (Set 6)**

Chapters: 1 Investigative World of Science · 2 Invisible Living World · 3 Health · 4 Electricity: Magnetic & Heating Effects · 5 Exploring Forces · 6 Pressure, Winds, Storms & Cyclones · 7 Particulate Nature of Matter

**Max
Marks:
80**

Name: _____

Time: 3 Hours

General Instructions: All questions are compulsory. Section A — 16×1 (MCQ / Assertion-Reason), Section B — 6×2, Section C — 8×3, Section D — 4×5, Section E — 2×4 (case study). Draw neat labelled diagrams wherever required.

SECTION A**Objective Type — 1 mark each**

- Q1.** Which of these is the correct order in a scientific study? [1]
- (a) conclusion → observation → experiment
 - (b) observation → hypothesis → experiment → conclusion
 - (c) experiment → observation → guess
 - (d) hypothesis → conclusion → observation
- Q2.** Microorganisms are measured/seen in units of a: [1]
- (a) metre
 - (b) micrometre (very small size)
 - (c) kilometre
 - (d) litre
- Q3.** Which microbe helps convert milk to curd and also aids digestion? [1]
- (a) Rhizobium
 - (b) Lactobacillus
 - (c) Plasmodium
 - (d) bread mould
- Q4.** Tuberculosis (TB) is caused by a: [1]
- (a) virus
 - (b) bacterium
 - (c) protozoan
 - (d) fungus
- Q5.** Which of the following is a method of food preservation? [1]
- (a) leaving food open
 - (b) canning
 - (c) keeping food warm
 - (d) adding water
- Q6.** Beriberi is caused by the deficiency of: [1]
- (a) vitamin B1
 - (b) vitamin C
 - (c) iron

(d) iodine

Q7. A carrier that spreads disease (like a mosquito) is called a: **[1]**

- (a) host
- (b) vector
- (c) producer
- (d) decomposer

Q8. An electric fuse protects a circuit using the _____ of current: **[1]**

- (a) magnetic effect
- (b) heating effect
- (c) chemical effect
- (d) none

Q9. Which pair of poles will attract each other? **[1]**

- (a) N and N
- (b) S and S
- (c) N and S
- (d) none of these

Q10. An electric bell works on the _____ of current: **[1]**

- (a) heating effect
- (b) magnetic effect
- (c) chemical effect
- (d) lighting effect

Q11. Weight of a body is the force of _____ on it: **[1]**

- (a) friction
- (b) gravity
- (c) magnetism
- (d) air

Q12. To move a heavy box more easily we can put _____ under it: **[1]**

- (a) sandpaper
- (b) rollers/wheels
- (c) glue
- (d) a rough mat

Q13. The pressure of the air around us is called: **[1]**

- (a) liquid pressure
- (b) atmospheric pressure
- (c) muscular pressure
- (d) blood pressure

Q14. Storms are usually accompanied by: **[1]**

- (a) calm weather
- (b) strong winds and rain
- (c) bright sunshine

(d) snow only

Q15. Assertion (A): Food kept in a refrigerator lasts longer. [1]

Reason (R): Low temperature slows down the growth of microorganisms.

- (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

Q16. Assertion (A): A gas can be compressed into a small cylinder. [1]

Reason (R): The particles of a gas are tightly packed with no space between them.

- (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

SECTION B

Very Short Answer — 2 marks each

Q17. Why should a scientist keep an open mind while investigating? [2]

Q18. Name one useful and one harmful fungus. [2]

Q19. State two ways in which communicable diseases can spread. [2]

Q20. Why does the coiled wire in a heater get hot but the connecting copper wires do not? [2]

Q21. Define weight. In which direction does it act? [2]

Q22. Why is it difficult to compress a liquid? [2]

SECTION C

Short Answer — 3 marks each

Q23. Give three differences between a hypothesis and a conclusion. [3]

Q24. Explain how microorganisms are used in the preparation of (a) curd and (b) bread. [3]

Q25. What is immunisation? Why is it important for children? [3]

Q26. Draw a simple labelled diagram of an electromagnet and name its parts. [3]

Q27. State two advantages and two disadvantages of friction. [3]

Q28. Explain why buildings and monuments are damaged by strong winds during a storm. [3]

Q29. List three steps that should be taken after a cyclone has passed. [3]

Q30. Explain, using particles, why we can smell food being cooked in the kitchen from another room. [3]

SECTION D

Long Answer — 5 marks each

Q31. (a) Name the four main groups of microorganisms with an example of each. (b) Explain two ways microorganisms are harmful to us. [5]

- Q32.** (a) What is a balanced diet? (b) Draw/describe a food-plate showing the main food groups and one example food from each. [5]
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- Q33.** (a) Explain, with one use each, the heating and magnetic effects of electric current. (b) Why is an electromagnet called a temporary magnet? [5]
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- Q34.** (a) State the relation between pressure, force and area. (b) A force of **100 N** acts on an area of **0.5 m²**; calculate the pressure. (c) Why do school bags have wide straps? [5]
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SECTION E

Case-Study Based — 4 marks each

- Q35. Case Study 1 — Immunisation drive.** A health worker visits a school to give children the polio drops and other vaccines as part of a government programme. [4]
- (i) What is the general name for giving such vaccines? [1]
 - (ii) How does a vaccine protect the child? [1]
 - (iii) Name one disease prevented by vaccination. [1]
 - (iv) Why are vaccines given mostly in childhood? [1]
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- Q36. Case Study 2 — Heavy bag, sore shoulder.** A student complains that a school bag with thin straps hurts the shoulder, while a bag with broad straps feels comfortable. [4]
- (i) Name the physical quantity that causes the discomfort. [1]
 - (ii) How is it related to force and area? [1]
 - (iii) Why do broad straps reduce the pain? [1]
 - (iv) Give one more everyday example of the same idea. [1]
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— All the Best! —

ANSWER KEY & MARKING SCHEME

SECTION A

Answers

- Q1.** (b) observation → hypothesis → experiment → conclusion
- Q2.** (b) micrometre (very small size)
- Q3.** (b) Lactobacillus
- Q4.** (b) bacterium
- Q5.** (b) canning
- Q6.** (a) vitamin B1
- Q7.** (b) vector
- Q8.** (b) heating effect
- Q9.** (c) N and S
- Q10.** (b) magnetic effect
- Q11.** (b) gravity
- Q12.** (b) rollers/wheels
- Q13.** (b) atmospheric pressure
- Q14.** (b) strong winds and rain
- Q15.** (a) Both A and R true, R explains A
- Q16.** (c) A true, R false (gas particles have large spaces between them)

SECTION B

Answers

- Q17.** So personal bias does not affect the results; the scientist should accept whatever the evidence shows, even if it differs from the expected answer.
- Q18.** Useful: yeast / Penicillium; Harmful: bread mould / the fungus causing ringworm (any one each).
- Q19.** Through air (coughing/sneezing), contaminated water or food, direct contact, and insect vectors (any two).
- Q20.** The coil is made of high-resistance nichrome which heats up strongly; the copper connecting wires have very low resistance, so they carry the same current without heating much.
- Q21.** Weight is the force with which the Earth pulls a body towards its centre; it acts vertically downward.
- Q22.** A liquid's particles are already close together with very little space between them, so they cannot be pushed much closer.

SECTION C

Answers

- Q23.** A hypothesis is a guess made before testing, is unproven, and guides the experiment; a conclusion is stated after testing, is based on evidence/data, and answers the question.
- Q24.** (a) Curd: Lactobacillus bacteria ferment the milk sugar, setting it into curd. (b) Bread: yeast ferments the dough producing carbon dioxide, which makes the bread rise and become soft.
- Q25.** Immunisation is protecting a person against a disease by giving a vaccine. It is important for children because it builds their immunity early and prevents serious diseases like polio and measles.
- Q26.** An iron nail (core) with insulated copper wire wound around it, connected to a cell and a switch; when the switch is on, the nail becomes a magnet. Parts: soft-iron core, coil of insulated wire, cell, switch.

- Q27.** Advantages: lets us walk and grip, brakes work, we can write. Disadvantages: causes wear and tear of parts, and wastes energy as heat.
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- Q28.** Fast strong winds exert a large force/pressure on structures; loose or weak parts cannot withstand it, so roofs, trees, hoardings and old buildings are damaged or blown away.
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- Q29.** Help the injured and shift them to hospitals; do not enter damaged buildings; use only clean/boiled water; clear debris and restore power/water safely (any three).
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- Q30.** The tiny particles of the cooking food escape into the air and, being in constant motion, diffuse and spread through the house until they reach our nose.
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SECTION D

Answers

- Q31.** (a) Bacteria (Lactobacillus), Fungi (yeast), Protozoa (Amoeba), Algae (Spirogyra). (b) They cause diseases in humans, animals and plants, and they spoil food, making it unfit to eat.
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- Q32.** (a) A diet containing all nutrients in the right amounts. (b) Food plate: cereals (rice/roti) for carbohydrates; pulses/milk/egg for proteins; ghee/oil for fats; fruits and vegetables for vitamins and minerals; water and roughage.
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- Q33.** (a) Heating effect — used in an electric iron; magnetic effect — used in an electric bell. (b) It behaves as a magnet only while current flows and loses its magnetism when the current is switched off — hence temporary.
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- Q34.** (a) $\text{Pressure} = \frac{\text{Force}}{\text{Area}}$. (b) $P = \frac{1000.5}{5} = 200 \text{ Pa}$. (c) Wide straps spread the weight of the bag over a larger area of the shoulder, reducing the pressure and the pain.
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SECTION E

Answers

- Q35.** (i) Immunisation / vaccination. (ii) It makes the body produce antibodies so it can fight that microbe in future (immunity). (iii) Polio / measles / tetanus (any one). (iv) To protect them from the start, as children are more prone to these diseases.
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- Q36.** (i) Pressure. (ii) $\text{Pressure} = \frac{\text{Force}}{\text{Area}}$. (iii) Broad straps increase the area over which the weight acts, so the pressure on the shoulder is less. (iv) Wide tractor tyres / sharp knife / camel's broad feet (any one).
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