

**MID-TERM EXAMINATION — Class 8 Science (Set 4)**

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.** The step in which a scientist records what actually happens in an experiment is: **[1]**
- (a) hypothesis
 - (b) data collection
 - (c) guessing
 - (d) prediction
- Q2.** Antibiotics are obtained from certain: **[1]**
- (a) insects
 - (b) microorganisms
 - (c) metals
 - (d) plants only
- Q3.** Which microorganism causes food poisoning if food is left uncovered? **[1]**
- (a) Rhizobium
 - (b) harmful bacteria
 - (c) algae
 - (d) yeast used in bread
- Q4.** Dengue and chikungunya are spread by: **[1]**
- (a) houseflies
 - (b) mosquitoes
 - (c) cockroaches
 - (d) rats
- Q5.** The nitrogen in the air is made usable to plants mainly by: **[1]**
- (a) lightning and Rhizobium
 - (b) houseflies
 - (c) earthworms only
 - (d) sunlight only
- Q6.** Night blindness is caused by the deficiency of: **[1]**
- (a) vitamin A
 - (b) vitamin C
 - (c) iron

(d) iodine

Q7. Goitre is caused by the deficiency of the mineral: **[1]**

- (a) calcium
- (b) iron
- (c) iodine
- (d) sodium

Q8. When current flows through a wire, the wire produces: **[1]**

- (a) only light
- (b) heat and a magnetic field
- (c) sound only
- (d) nothing

Q9. A crane in a scrap yard lifts heavy iron using a/an: **[1]**

- (a) permanent magnet
- (b) electromagnet
- (c) spring
- (d) pulley only

Q10. Which of these is a magnetic material? **[1]**

- (a) Iron
- (b) Plastic
- (c) Wood
- (d) Glass

Q11. The push or pull on an object is called a: **[1]**

- (a) mass
- (b) force
- (c) speed
- (d) weight only

Q12. A streamlined shape is given to aeroplanes and ships to reduce: **[1]**

- (a) gravity
- (b) friction/air (fluid) resistance
- (c) weight
- (d) pressure of blood

Q13. A liquid exerts pressure on the: **[1]**

- (a) bottom only
- (b) walls only
- (c) bottom and walls of its container
- (d) top surface only

Q14. Winds are essentially: **[1]**

- (a) still air
- (b) moving air
- (c) water vapour only

(d) dust

Q15. Assertion (A): We should cover our nose and mouth while sneezing. [1]

Reason (R): Many diseases spread through tiny droplets in the 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

Q16. Assertion (A): Liquids take the shape of the container. [1]

Reason (R): Particles in a liquid can move and slide over one another.

(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. What is meant by 'collecting data' in an experiment? [2]

Q18. Name two diseases spread by mosquitoes. [2]

Q19. What is meant by 'preservation of food'? Give one method. [2]

Q20. Name one appliance each that uses (a) the heating effect and (b) the magnetic effect of current. [2]

Q21. Name the force responsible for: (a) a fruit falling from a tree, (b) stopping a moving cycle when brakes are applied. [2]

Q22. Arrange solids, liquids and gases in increasing order of the spacing between their particles. [2]

SECTION C

Short Answer — 3 marks each

Q23. State three qualities of a good scientific investigator. [3]

Q24. How do microorganisms help in cleaning the environment? Explain with one example. [3]

Q25. What are communicable diseases? Explain any two ways of preventing their spread. [3]

Q26. Explain how you would make an electromagnet stronger. State two of its uses. [3]

Q27. Why is friction necessary for walking? What would happen if there were no friction? [3]

Q28. Explain, using air pressure, why the tyres of vehicles are filled with air. [3]

Q29. Explain how a cyclone is formed over the sea. [3]

Q30. State three properties of matter that can be explained by the fact that matter is made of moving particles. [3]

SECTION D

Long Answer — 5 marks each

- Q31.** (a) Name four groups of microorganisms with an example each. (b) State two harmful and two useful activities of microorganisms. [5]
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- Q32.** (a) What is a balanced diet? (b) Name any four deficiency diseases and the nutrient lacking in each. [5]
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- Q33.** (a) Explain the heating effect of electric current and give two appliances that use it. (b) Why should we not overload an electric socket? [5]
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- Q34.** (a) State the formula for pressure. (b) A force of **360 N** acts on an area of **4 m²**; calculate the pressure. (c) Why is the base of a dam made thicker than its top? [5]
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SECTION E

Case-Study Based — 4 marks each

- Q35. Case Study 1 — Rusty gate.** An iron gate exposed to rain develops a reddish-brown flaky layer, while a painted gate stays shiny. [4]
- (i) Name the process that damages the iron gate. [1]
 - (ii) Name two conditions needed for it to occur. [1]
 - (iii) Why does the painted gate stay protected? [1]
 - (iv) Suggest one other method to protect iron from this. [1]
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- Q36. Case Study 2 — Wind and pressure.** A student blows air across the top of a strip of paper held near the lips; the free end of the paper rises up. [4]
- (i) Does fast-moving air have higher or lower pressure? [1]
 - (ii) Why does the paper rise? [1]
 - (iii) Name the moving air around us in nature. [1]
 - (iv) Name the instrument used to measure air pressure. [1]
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— All the Best! —

ANSWER KEY & MARKING SCHEME

SECTION A

Answers

- Q1.** (b) data collection
- Q2.** (b) microorganisms
- Q3.** (b) harmful bacteria
- Q4.** (b) mosquitoes
- Q5.** (a) lightning and Rhizobium
- Q6.** (a) vitamin A
- Q7.** (c) iodine
- Q8.** (b) heat and a magnetic field
- Q9.** (b) electromagnet
- Q10.** (a) Iron
- Q11.** (b) force
- Q12.** (b) friction/air (fluid) resistance
- Q13.** (c) bottom and walls of its container
- Q14.** (b) moving air
- Q15.** (a) Both A and R true, R explains A
- Q16.** (a) Both A and R true, R explains A

SECTION B

Answers

- Q17.** Recording the measurements and observations made during the experiment so they can be analysed to reach a conclusion.
- Q18.** Malaria, dengue, chikungunya (any two).
- Q19.** Treating food so it does not spoil, by stopping the growth of microbes. Method: refrigeration, salting, drying, canning (any one).
- Q20.** (a) Heating: electric iron/heater. (b) Magnetic: electric bell / electromagnetic crane.
- Q21.** (a) Gravitational force. (b) Frictional force.
- Q22.** Solids < liquids < gases.

SECTION C

Answers

- Q23.** Curiosity and careful observation; honesty in recording data; patience and open-mindedness; willingness to repeat and check results (any three).
- Q24.** Microbes decompose dead plants, animals and waste into simpler substances (e.g. bacteria in compost/sewage treatment), returning nutrients to the soil and cleaning the environment.
- Q25.** Diseases that spread from an infected person to others. Prevention: keep clean, cover coughs/sneezes, drink safe water, get vaccinated, control mosquitoes (any two).
- Q26.** Increase the number of turns of wire and the current, and use a soft-iron core. Uses: in electric bells, cranes to lift iron, loudspeakers (any two).
- Q27.** Friction between our feet and the ground gives the grip that lets us push forward. Without friction the ground would be like slippery ice — we could not walk, grip or stop.

- Q28.** Compressed air inside a tyre pushes outward equally in all directions, keeping the tyre firm and supporting the vehicle's weight while cushioning bumps.
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- Q29.** Air over warm sea water heats and rises, creating a low-pressure centre; moist air rushes in and rises, and the rotating winds and clouds build up into a cyclone.
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- Q30.** Substances have mass and take up space; they can diffuse and mix; gases can be compressed; smells spread; liquids/gases flow (any three).
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SECTION D

Answers

- Q31.** (a) Bacteria (Lactobacillus), Fungi (yeast), Protozoa (Amoeba), Algae (Spirogyra). (b) Harmful: cause disease, spoil food. Useful: make curd/bread, fix nitrogen, make medicines.
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- Q32.** (a) A diet containing all nutrients in the right amounts. (b) Scurvy — vitamin C; Rickets — vitamin D; Anaemia — iron; Goitre — iodine; Night blindness — vitamin A (any four).
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- Q33.** (a) Current heats a resistance wire — used in heaters, irons, geysers, toasters (any two). (b) Overloading draws too much current, which overheats the wires and can cause a short circuit or fire.
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- Q34.** (a) $\text{Pressure} = \frac{\text{Force}}{\text{Area}}$. (b) $P = \frac{3604}{40} = 90 \text{ Pa}$. (c) Water pressure increases with depth, so the base bears the greatest pressure and is made thicker for strength.
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SECTION E

Answers

- Q35.** (i) Rusting (corrosion). (ii) Air (oxygen) and moisture (water). (iii) Paint stops air and moisture from touching the iron. (iv) Galvanising / oiling / greasing (any one).
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- Q36.** (i) Lower pressure. (ii) The slower air below has higher pressure and pushes the paper up towards the low-pressure region. (iii) Wind. (iv) Barometer.
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