

**MID-TERM EXAMINATION — Class 8 Science (Set 2)**

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.** Science begins with careful: [1]
- (a) guessing
 - (b) observation and questioning
 - (c) memorising
 - (d) copying
- Q2.** After forming a hypothesis, a scientist tests it by performing a/an: [1]
- (a) conclusion
 - (b) observation
 - (c) experiment
 - (d) survey
- Q3.** Bread rises because of the microorganism: [1]
- (a) Rhizobium
 - (b) yeast
 - (c) Amoeba
 - (d) Lactobacillus
- Q4.** Malaria is caused by a: [1]
- (a) bacterium
 - (b) virus
 - (c) protozoan
 - (d) fungus
- Q5.** The process of converting sugar into alcohol by yeast is called: [1]
- (a) fermentation
 - (b) nitrogen fixation
 - (c) pasteurisation
 - (d) digestion
- Q6.** Deficiency of iron in the diet causes: [1]
- (a) goitre
 - (b) anaemia
 - (c) scurvy

(d) rickets

Q7. Which of these spreads through contaminated water? **[1]**

- (a) Diabetes
- (b) Cholera
- (c) Night blindness
- (d) Anaemia

Q8. The wire that becomes hot and glows in an electric heater is made of: **[1]**

- (a) copper
- (b) aluminium
- (c) nichrome
- (d) silver

Q9. A temporary magnet made using electric current is a/an: **[1]**

- (a) bar magnet
- (b) electromagnet
- (c) compass
- (d) horseshoe magnet

Q10. The direction of a magnetic field around a wire can be found using the compass because current has a: **[1]**

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

Q11. When a ball is thrown up and comes down, the force acting on it is: **[1]**

- (a) muscular force
- (b) friction
- (c) gravity
- (d) magnetic force

Q12. Friction always acts: **[1]**

- (a) in the direction of motion
- (b) opposite to the direction of motion
- (c) upward
- (d) downward

Q13. Air exerts pressure in: **[1]**

- (a) the downward direction only
- (b) the upward direction only
- (c) all directions
- (d) no direction

Q14. The 'eye' of a cyclone is a region of: **[1]**

- (a) very high winds
- (b) calm and low pressure

- (c) heavy rain only
- (d) high pressure

- Q15. Assertion (A):** Boiled and cooled water is safe to drink. [1]
Reason (R): Boiling kills most disease-causing microorganisms in 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

- Q16. Assertion (A):** Solids have a fixed shape. [1]
Reason (R): The particles in a solid are very loosely packed and move freely.
- (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 is a hypothesis important in a scientific investigation? [2]
- Q18.** Name one microorganism that is harmful and one that is useful to humans. [2]
- Q19.** What is a vaccine? How does it help our body? [2]
- Q20.** Name two appliances that work on the heating effect of electric current. [2]
- Q21.** State two ways to increase friction, giving one example of each. [2]
- Q22.** Why is it easier to pour water than honey? (Explain using particles.) [2]

SECTION C

Short Answer — 3 marks each

- Q23.** Explain the terms: (a) fermentation, (b) pasteurisation. Give one use of each. [3]
- Q24.** What are antibiotics? State one use and one precaution while using them. [3]
- Q25.** Explain why a balanced diet is important for good health. Name any two nutrients and one source of each. [3]
- Q26.** With the help of a diagram, describe an electric bell as an application of the magnetic effect of current. [3]
- Q27.** What is gravitational force? State two effects of gravity in daily life. [3]
- Q28.** How is a sea breeze formed during the day? Explain. [3]
- Q29.** State any three precautions to be taken before a cyclone strikes. [3]
- Q30.** Give three differences between the arrangement of particles in solids, liquids and gases. [3]

SECTION D

Long Answer — 5 marks each

- Q31.** (a) What are microorganisms? Give any two ways they are useful and two ways they are harmful. [5]
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- Q32.** (a) What is a communicable disease? Give two examples and explain any two ways such diseases spread. (b) State two ways to prevent them. [5]
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- Q33.** (a) State the heating effect of electric current and give one use. (b) What is a fuse and why is it used in circuits? [5]
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- Q34.** (a) Define pressure and write its formula. (b) A force of **200 N** acts on an area of **4 m²**. Find the pressure. (c) Why do heavy trucks have many wheels? [5]
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SECTION E

Case-Study Based — 4 marks each

- Q35. Case Study 1 — Curd from milk.** A student adds a spoon of curd to warm milk and leaves it overnight. Next morning the milk has set into curd. [4]
- (i) Name the microorganism responsible. [1]
 - (ii) Name the process by which milk turns into curd. [1]
 - (iii) Why is warm milk (not cold) used? [1]
 - (iv) State one nutritional benefit of curd. [1]
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- Q36. Case Study 2 — Slipping on a wet floor.** People often slip and fall on a freshly-mopped wet floor, so a 'wet floor' warning board is placed there. [4]
- (i) Name the force that normally prevents us from slipping. [1]
 - (ii) Why does a wet floor make us slip? [1]
 - (iii) State one way to increase grip on such floors. [1]
 - (iv) Give one everyday example where friction is useful. [1]
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— All the Best! —

ANSWER KEY & MARKING SCHEME

SECTION A

Answers

- Q1.** (b) observation and questioning
- Q2.** (c) experiment
- Q3.** (b) yeast
- Q4.** (c) protozoan
- Q5.** (a) fermentation
- Q6.** (b) anaemia
- Q7.** (b) Cholera
- Q8.** (c) nichrome
- Q9.** (b) electromagnet
- Q10.** (c) magnetic effect
- Q11.** (c) gravity
- Q12.** (b) opposite to the direction of motion
- Q13.** (c) all directions
- Q14.** (b) calm and low pressure
- Q15.** (a) Both A and R true, R explains A
- Q16.** (c) A true, R false (particles in a solid are tightly packed)

SECTION B

Answers

- Q17.** A hypothesis gives a testable prediction that guides the experiment and can be checked as true or false.
- Q18.** Harmful: Plasmodium/Salmonella; Useful: Lactobacillus/Rhizobium/yeast (any one each).
- Q19.** A vaccine is a weakened/dead form of a microbe introduced into the body; it trains the body to make antibodies so it can fight that disease later (immunity).
- Q20.** Electric iron, heater, geyser, toaster, kettle (any two).
- Q21.** Making surfaces rough (e.g. treaded tyres), pressing harder, using sand on ice, grooved soles (any two).
- Q22.** Honey's particles attract each other more strongly (more viscous), so it flows slowly; water's particles move more freely, so it pours easily.

SECTION C

Answers

- Q23.** (a) Fermentation: breakdown of sugar by microbes (e.g. yeast) to form alcohol/CO₂ — used in baking/brewing. (b) Pasteurisation: heating milk then cooling quickly to kill microbes — used to preserve milk.
- Q24.** Antibiotics are medicines that kill or stop the growth of bacteria (e.g. penicillin). Use: to cure bacterial infections. Precaution: take only on a doctor's advice and complete the full course.
- Q25.** A balanced diet supplies all nutrients in the right amounts for growth, energy and protection from disease. e.g. Proteins — pulses/milk (growth); Carbohydrates — rice/bread (energy).
- Q26.** An electric bell uses an electromagnet: when current flows, the electromagnet pulls an iron armature which strikes the gong; this breaks the circuit, the armature springs back, and the cycle repeats, ringing the bell.
- Q27.** Gravitational force is the attraction between masses. Effects: objects fall to the ground; it gives us weight; holds the atmosphere and keeps us on Earth (any two).

- Q28.** During the day, land heats faster than the sea. Warm air over the land rises (low pressure) and cooler air from the sea moves in to replace it — this cool wind is the sea breeze.
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- Q29.** Keep an emergency kit; move valuables and animals to safety; secure loose objects; store drinking water; stay tuned to warnings (any three).
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- Q30.** Solids: particles tightly packed, fixed positions. Liquids: particles close but can slide/move. Gases: particles far apart, move fast and freely.
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SECTION D

Answers

- Q31.** (a) Microorganisms are tiny living organisms seen only under a microscope. Useful: make curd, bread, medicines, fix nitrogen. Harmful: spoil food, cause diseases in plants/animals/humans.
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- Q32.** (a) A communicable disease spreads from person to person, e.g. tuberculosis, cholera; spread through air (coughing), water, food or vectors. (b) Prevent by cleanliness, safe water, vaccination, avoiding contact (any two).
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- Q33.** (a) Current heats a resistance wire — used in heaters/irons. (b) A fuse is a thin wire of low melting point placed in a circuit; when current becomes too high it melts and breaks the circuit, protecting appliances from damage/fire.
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- Q34.** (a) $\text{Pressure} = \frac{\text{Force}}{\text{Area}}$. (b) $P = \frac{2004}{4} = 50 \text{ Pa}$. (c) Many wheels spread the large weight over a bigger area, reducing the pressure on the road so it does not sink/damage.
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SECTION E

Answers

- Q35.** (i) Lactobacillus. (ii) Fermentation. (iii) The bacteria grow and act best in warm conditions; cold milk slows them down. (iv) It is rich in protein and calcium / aids digestion (any one).
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- Q36.** (i) Friction. (ii) Water fills the tiny rough gaps and acts as a lubricant, reducing friction. (iii) Use rough mats / rubber-soled footwear / dry the floor. (iv) Walking, braking, writing, gripping objects (any one).
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