

**MID-TERM EXAMINATION — Class 8 Science (Set 5)**

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.** A scientific 'conclusion' is drawn after: [1]
- (a) guessing the answer
 - (b) analysing the data from experiments
 - (c) reading a story
 - (d) asking a friend
- Q2.** Which of these helps in making antibiotics? [1]
- (a) Penicillium (a fungus)
 - (b) housefly
 - (c) Amoeba
 - (d) algae only
- Q3.** Blue-green algae add _____ to the soil: [1]
- (a) oxygen only
 - (b) nitrogen compounds
 - (c) salt
 - (d) sand
- Q4.** Which is a viral disease? [1]
- (a) Typhoid
 - (b) Influenza
 - (c) Malaria
 - (d) Ringworm
- Q5.** Curd, bread and cheese are all products made using: [1]
- (a) microorganisms
 - (b) pesticides
 - (c) metals
 - (d) minerals only
- Q6.** A person with bleeding gums and weakness most likely lacks: [1]
- (a) vitamin C
 - (b) iron
 - (c) iodine

(d) calcium

Q7. Which is the best way to prevent mosquito-borne diseases? **[1]**

- (a) eating more
- (b) not allowing water to collect and stagnate
- (c) sleeping more
- (d) drinking cold water

Q8. The filament of an electric bulb glows because of the _____ of current: **[1]**

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

Q9. The magnetic field is strongest: **[1]**

- (a) far from a magnet
- (b) at the poles of a magnet
- (c) at the middle of a magnet
- (d) outside the room

Q10. Which one can be picked up by an electromagnet? **[1]**

- (a) An aluminium can
- (b) iron nails
- (c) a plastic spoon
- (d) a glass marble

Q11. The force that pulls objects towards the centre of the Earth is: **[1]**

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

Q12. On which surface is friction the greatest? **[1]**

- (a) polished marble
- (b) glass
- (c) sandpaper
- (d) wet tile

Q13. Pressure exerted by a liquid increases with: **[1]**

- (a) colour of the liquid
- (b) depth
- (c) width of the container only
- (d) temperature only

Q14. Cyclones are given advance warning by: **[1]**

- (a) the postal department
- (b) the meteorological department
- (c) the police

(d) the railways

Q15. Assertion (A): Insects like the housefly can spread diseases. [1]

Reason (R): They carry microbes from filth to our food.

- (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): The smell of hot food spreads faster than that of cold food. [1]

Reason (R): At higher temperature the particles move faster and diffuse quickly.

- (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 an experiment change only one factor at a time? [2]

Q18. Name one microorganism used in (a) baking and (b) making antibiotics. [2]

Q19. What is a balanced diet in one line? Why is roughage included in it? [2]

Q20. State two safety rules while handling electrical appliances. [2]

Q21. Give one example each of a contact force and a non-contact force. [2]

Q22. Why does the smell of incense sticks reach us across a room? [2]

SECTION C

Short Answer — 3 marks each

Q23. Explain the steps of the scientific method in the correct order. [3]

Q24. Explain the role of microorganisms in (a) fixing nitrogen and (b) decomposing waste. [3]

Q25. What are vaccines? How do they protect us? Name one disease prevented by vaccination. [3]

Q26. State and explain two factors that affect the strength of an electromagnet. [3]

Q27. Explain why smooth soles of worn-out shoes are dangerous, and how tyres are designed to increase grip. [3]

Q28. Explain how a land breeze is formed at night. [3]

Q29. State three effects of a strong cyclone on coastal areas and one relief measure. [3]

Q30. Using the particle model, explain why a gas fills its container completely but a solid does not. [3]

SECTION D

Long Answer — 5 marks each

Q31. (a) What are microorganisms and where are they found? (b) Give two useful and two harmful roles of microorganisms with examples. [5]

- Q32.** (a) Define deficiency disease. (b) Make a table of any four vitamins/minerals, the disease caused by their deficiency, and one food source of each. [5]
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- Q33.** (a) Compare the heating effect and magnetic effect of electric current, giving one use of each. [5]
(b) Why is a soft-iron core used in an electromagnet?
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- Q34.** (a) Define pressure and state its SI unit. (b) A force of **120 N** acts on an area of **2 m²**; find the pressure. (c) Why is it painful to stand on a small nail but not on a flat floor? [5]
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SECTION E

Case-Study Based — 4 marks each

- Q35. Case Study 1 — The bread mould.** A slice of moist bread left in a warm place for a few days develops greenish-white patches. [4]
- (i) Name the microorganism forming the patches. [1]
 - (ii) Name two conditions that helped it grow. [1]
 - (iii) Is this bread safe to eat? Why? [1]
 - (iv) Suggest one way to prevent bread from spoiling. [1]
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- Q36. Case Study 2 — Storm safety.** A weather bulletin warns of a severe thunderstorm with strong winds and lightning in the evening. [4]
- (i) Name the instrument used to measure wind speed. [1]
 - (ii) State one place you should NOT take shelter under. [1]
 - (iii) Give one precaution for electrical appliances. [1]
 - (iv) Why should you stay away from open fields during lightning? [1]
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— All the Best! —

ANSWER KEY & MARKING SCHEME

SECTION A

Answers

- Q1.** (b) analysing the data from experiments
- Q2.** (a) Penicillium (a fungus)
- Q3.** (b) nitrogen compounds
- Q4.** (b) Influenza
- Q5.** (a) microorganisms
- Q6.** (a) vitamin C
- Q7.** (b) not allowing water to collect and stagnate
- Q8.** (c) heating effect
- Q9.** (b) at the poles of a magnet
- Q10.** (b) iron nails
- Q11.** (b) gravity
- Q12.** (c) sandpaper
- Q13.** (b) depth
- Q14.** (b) the meteorological department
- Q15.** (a) Both A and R true, R explains A
- Q16.** (a) Both A and R true, R explains A

SECTION B

Answers

- Q17.** So we can be sure that any change in the result is caused by that one factor — this makes the test fair.
- Q18.** (a) Baking — yeast. (b) Antibiotics — Penicillium (a fungus).
- Q19.** A diet with all nutrients in the right amounts. Roughage (fibre) adds bulk and helps in the easy movement of food through the intestines (prevents constipation).
- Q20.** Do not touch switches with wet hands; do not overload sockets; use proper earthing/fuses; switch off before repairs (any two).
- Q21.** Contact force: friction / muscular force. Non-contact force: gravity / magnetic force.
- Q22.** The tiny scented particles from the incense spread out and mix with air particles (diffusion) and travel across the room to our nose.

SECTION C

Answers

- Q23.** Observation → asking a question → forming a hypothesis → doing experiments and collecting data → analysing results → drawing a conclusion.
- Q24.** (a) Rhizobium (in legume roots) and blue-green algae convert atmospheric nitrogen into compounds plants can use. (b) Bacteria and fungi break down dead matter and waste into simple substances, enriching the soil.
- Q25.** Vaccines are weakened/dead microbes given to the body so it makes antibodies and 'remembers' the microbe, giving immunity. Diseases prevented: polio, tetanus, measles (any one).
- Q26.** (i) Number of turns — more turns strengthen the magnet. (ii) Current — a larger current gives a stronger field. (A soft-iron core also increases strength.)

- Q27.** Worn smooth soles have little friction, so they slip easily — dangerous on wet floors. Tyres are given grooves/treads to increase friction and grip on the road.
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- Q28.** At night, land cools faster than the sea. Warmer air over the sea rises (low pressure) and cooler air from the land moves out to the sea — this is the land breeze.
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- Q29.** Uproots trees, destroys houses, floods low areas, damages crops and power lines (any three). Relief: evacuation to shelters / supplying food, water and medicines (any one).
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- Q30.** A gas's particles are far apart and move fast and freely, so they spread to fill all the space; a solid's particles are tightly held in fixed positions, so it keeps its shape and size.
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SECTION D

Answers

- Q31.** (a) Microorganisms are tiny organisms seen only under a microscope, found in air, water, soil and inside other organisms. (b) Useful: make curd (*Lactobacillus*), fix nitrogen (*Rhizobium*). Harmful: cause disease (*Plasmodium*), spoil food (moulds).
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- Q32.** (a) A disease caused by the long-term lack of a nutrient. (b) Vitamin C → scurvy → citrus fruits; Vitamin D → rickets → sunlight/milk; Iron → anaemia → green leafy vegetables; Iodine → goitre → iodised salt.
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- Q33.** (a) Heating effect: current heats a wire — used in a heater. Magnetic effect: current makes a magnetic field — used in an electric bell. (b) Soft iron becomes strongly magnetic when current flows and loses magnetism at once when switched off, which is needed for an electromagnet.
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- Q34.** (a) $\text{Pressure} = \frac{\text{Force}}{\text{Area}}$; SI unit pascal (Pa). (b) $P = \frac{120}{2} = 60 \text{ Pa}$. (c) A nail's tip has a tiny area, so body weight gives a very large pressure (painful); a flat floor spreads it over a large area (low pressure).
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SECTION E

Answers

- Q35.** (i) A fungus (bread mould, e.g. *Rhizopus*). (ii) Moisture and warmth (and food/bread). (iii) No — the mould produces harmful substances that can make us ill. (iv) Keep bread dry, refrigerate it, or store in an airtight container (any one).
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- Q36.** (i) Anemometer. (ii) A tall tree / metal pole. (iii) Unplug electrical appliances / switch off the mains. (iv) An open field makes you the tallest object, so lightning is more likely to strike you.
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