

Time: 1 Hour 30 Minutes

Max. Marks: 40

Instructions:

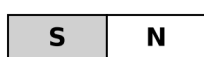
1. The question paper has 4 sections and 17 questions. Answer all the questions.
2. Section A: 10 multiple choice questions of 1 mark each.
3. Section B: 3 questions of 2 marks each. Section C: 2 questions of 4 marks each.
4. Section D: 2 questions of 8 marks each, with internal choice.
5. Draw diagrams wherever necessary and show all steps in numerical problems.

SECTION – A

10 × 1 = 10

Choose the correct answer and write its letter.

1. A force can change
 - A) only the speed of an object
 - B) only the direction of motion
 - C) the shape, speed and direction of motion of an object
 - D) the mass of an object
2. The force of friction always acts
 - A) in the direction of motion
 - B) opposite to the direction of motion
 - C) upwards
 - D) downwards
3. A balloon rubbed on dry hair attracts small bits of paper because of
 - A) magnetic force
 - B) electrostatic force
 - C) gravitational force
 - D) muscular force
4. The force with which the Earth pulls an object towards itself is called its
 - A) mass
 - B) weight
 - C) pressure
 - D) density
5. Pressure =
 - A) force × area
 - B) force ÷ area
 - C) area ÷ force
 - D) force + area
6. Two bar magnets are placed as shown. The magnets will



Magnet 1



Magnet 2

- A) attract each other
 - B) repel each other
 - C) not affect each other
 - D) lose their magnetism
7. The instrument used to measure atmospheric pressure is a
 - A) thermometer
 - B) barometer
 - C) anemometer
 - D) hygrometer

8. In the American continent, cyclones are called
A) typhoons B) hurricanes C) tornadoes D) monsoons
9. When current flows through a coil of wire wound on an iron nail, the nail becomes
A) a heater B) an electromagnet C) a fuse D) an electric cell
10. The smell of food being cooked reaches us from the kitchen because of
A) diffusion B) condensation C) melting D) freezing

SECTION – B

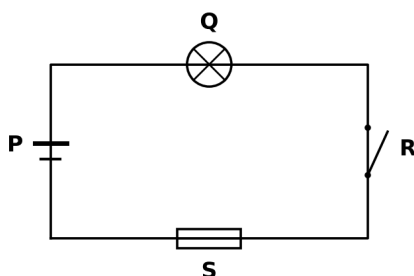
3 × 2 = 6

11. Why is it easier to cut vegetables with a sharp knife than with a blunt one?
12. The mass of a boy is 40 kg. Find his weight on the Earth. What will be his mass on the Moon? (Take $g = 10 \text{ N/kg}$)
13. Why does a gas fill the whole of the container in which it is kept, but a solid does not?

SECTION – C

2 × 4 = 8

14. Look at the circuit. Name the components P, Q, R and S and write the function of each.



15. Write any four safety measures people should take before and during a cyclone.

SECTION – D

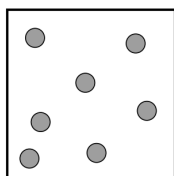
2 × 8 = 16

Each question has an internal choice. Answer either (A) or (B).

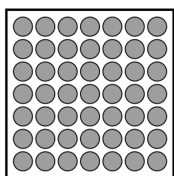
16. A) How is wind produced? Explain with the help of uneven heating of land and water. How do cyclones form over the sea?
- (OR)**
- B) Describe an activity to show that air exerts pressure. Write any three examples from daily life where we make use of air pressure.
17. A) What is the heating effect of electric current? Name four appliances that use it. Why is the heating element of an electric iron made of a special alloy (nichrome)? Why are LED bulbs preferred to filament bulbs?

(OR)

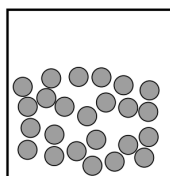
B) Compare solids, liquids and gases on the following points in a table: arrangement of particles, space between particles, force of attraction between particles, shape and volume, compressibility. Identify the state shown in each of the boxes P, Q and R.



P



Q



R

* * *

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