

PRACTICE QUESTIONS

SUBJECT - SCIENCE

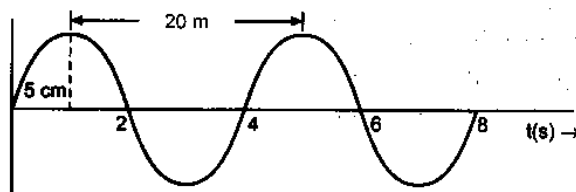
CLASS - IX

General Instructions:

- The question paper comprises of two sections, A and B. You are to attempt both the sections.
- All questions are compulsory.
- There is no overall choice.
- All questions of section A and all questions of section B are to be attempted separately.
- Question numbers 1 to 3 in section A are one-mark questions. These are to be answered in one word or one sentence.
- Question numbers 4 to 5 are two-mark questions, to be answered in about 30 words each.
- Question numbers 6 to 16 are three-mark questions, to be answered in about 50 words each.
- Question numbers 17 to 21 are five-mark questions, to be answered in about 70 words each.
- Question numbers 22 to 33 in section B are practical based questions (PBQs). Question numbers 22 to 30 are MCQs carrying one mark each. You are to choose one most appropriate response out of the four provided to you. Question numbers 31 to 33 are short answer type questions carrying two marks each.

Section-A

- Why are protozoans called early animals? 1
- The oxide of Aluminium has a chemical formula Al_2O_3 . State the valency of aluminium.
- How will you determine the maximum number of electrons that can be accommodated in each shell of an atom?
- A girl sits throughout the day and prepares for her exam. Calculate the work done by her if her mass is 40 kg and she sits for 8 h to study.
- Define potential energy. Derive a relation for potential energy of a mass 'm' raised to height 'h'.
- What is the difference between kilo-watt and kilo-watt hour? Calculate the power of a pump which draws 50 kg of water to height 5 m in 10 s. ($g = 10 \text{ m/s}^2$)
- Define wavelength and frequency. Observe the following graph and find wave velocity.



- What is echo? Prove that the distance of reflecting surface should be 17 m from the source at least, to hear a distinct echo in air.
- Define energy. What is its SI unit? List few types of energy with one example of each.
- *10. Mohan is a young man who observes the phenomena around him with great passion. On his way back home, he finds children floating paper boats in water. Some of them are even throwing pebbles in water. He walks up to them and asks them why pebbles sink and paper floats on water. Children give a smile to him as they don't know the reason. Mohan sits with them and tells them why it happened.
 - What explanation would he have given?
 - What values of Mohan are demonstrated here?
 - Give one more example of this phenomena.
- Give one example of each:
 - Asymmetry, bilateral and radial symmetry.
 - Acoelomates, pseudocoelomate and haemocoelomate.
 - Give one point of difference between notochord and nerve cord.
- What are the adaptations of reptiles towards terrestrial mode of life?
- Comment on the following statements:
 - Regular use of ORS on diarrhoea.
 - Wearing socks and full sleeves at night will prevent the attack from dengue.
 - Antibiotics are effective in case of bacteria but do not affect viruses.
- Define atomicity. Give an example each of monoatomic, diatomic, tetraatomic and polyatomic molecules.

* Value Based Question

* Note : The question paper will have a separate section of 10 marks from the unit: **Our Environment** for Open Text Based Assessment (OTBA) which has not been included.

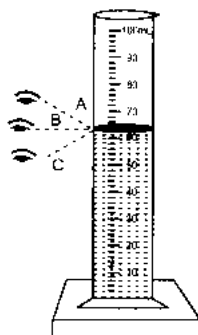
15. In the following table are given the mass number and atomic number of certain elements:

Element	A	B	C	D	E	F	G	H
Mass Number	2	3	3	6	9	11	19	23
Atomic Number	1	1	2	3	4	5	9	11

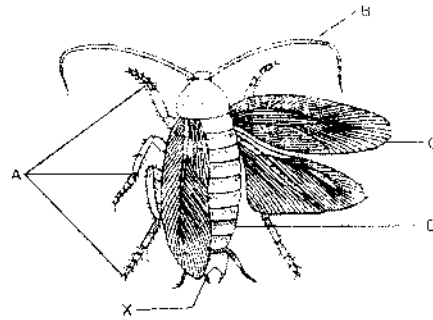
- (i) How many neutrons are present in 'F'?
- (ii) Which atoms are isotopes of the same element?
- (iii) Which atom will form single positively charged ion?
- (iv) Which is the atom of an inert gas?
- (v) Which will form single negatively charged ion?
- (vi) Which of these have 11 electrons?
16. If chlorine atom is available in the form of two isotopes $^{35}_{17}\text{Cl}$ (75%) and $^{37}_{17}\text{Cl}$ (25%). Calculate the average atomic mass of chlorine atom.
17. What are longitudinal waves? Represent them graphically. Explain the propagation of longitudinal waves through a medium. Distinguish between longitudinal waves and transverse waves.
18. What is pressure? Name and define its SI unit.
A cuboidal box of dimensions 5 m × 10 m × 20 cm is placed on a surface. If weight of box is 80 N, find the (a) maximum (b) minimum pressure exerted by the box on the surface.
19. In angiosperms, seeds are developed inside the fruit. The seeds may have single or double cotyledon which becomes green on germination.
(i) What will happen if the colour of the cotyledon is not green ?
(ii) How the plants are classified on the basis of number of seed leaves ?
(iii) Seeds of pine trees are found to be naked. What do you call such a tree ?
(iv) Can you identify a monocotyledon or dicotyledon from their leaves ?
(v) What will happen if pollination does not take place in angiosperm ?
20. Name the five classes of vertebrates. Compare any two on the basis of their:
(a) Habitat (b) Covering of skin (c) Respiratory organs
(d) Chambers of heart (e) Reproduction.
21. (a) Calculate the number of oxygen atoms in 0.1 mole of $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$.
(b) If one mole of sulphur weighs 32 grams, what is the mass (in grams) of 1 atom of sulphur?
(c) Identify the correct formula for ammonium sulphate from the following formula.
 $(\text{NH}_4)_2(\text{SO}_4)_3$, $(\text{NH}_4)_2\text{SO}_4$, $\text{NH}_4(\text{SO}_4)_2$

Section-B

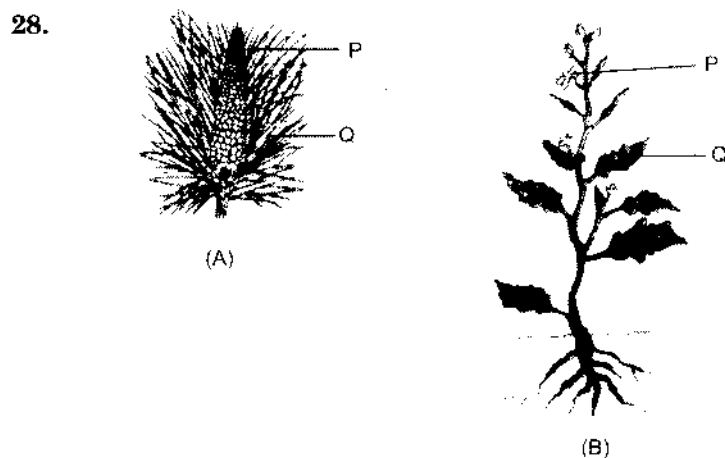
22. If a bell rings continuously, then the waves produced in air are:
(a) transverse (b) electromagnetic (c) pulses (d) longitudinal
23. Area of contact with a surface becomes nA from A. The pressure P will become
(a) nP (b) P/n (c) Pn^2 (d) P/n^2
24. Three students note the water level in a measuring cylinder as shown. The correct reading is taken by
(a) A and C (b) B (c) C (d) A and B



25. The common adaptive feature with reference to habitat in case of bony fish :
- (a) they have muscular tail for movement (b) they obtain oxygen dissolved in water by using gills
(c) skin is covered with scales (d) cold blooded animal.
26. In the diagram of cockroach given below, the part characteristic of its phylum is the part labelled as:



- (a) A (b) B (c) C (d) D
27. Black dot-like structures seen in the underside of fern leaflets are:
- (a) seeds (b) sori (c) sporophylls (d) spores.



In the diagrams (A) and (B) shown above:

- (i) The parts marked P in (A) and (B) are organs of reproduction.
(ii) The part marked P in (A) is for defence and in (B) is for absorption of minerals.
(iii) The part marked Q in (A) and (B) are for nutrition.
(iv) The part marked Q in (A) is for food storage and in (B) for making seeds.

The correct statements are:

- (a) (i) and (iv) (b) (i) and (iii)
(c) (ii) and (iv) (d) (ii) and (iii)
29. In a chemical reaction, the mass of the products is 56 g. If mass of one of the reactants is 26 g, then according to the law of conservation of mass, the mass of the other reactant will be:
- (a) 26 g (b) 36 g (c) 30 g (d) 82 g
30. Aditi was asked by her Science teacher to carry out an experiment to verify the law of conservation of mass. Four sets of apparatus are kept in chemistry laboratory at four places. The teacher ask Aditi to select the apparatus herself. Which of the following sets is most appropriate?
- (a) Conical flask, physical balance, cord, ignition tube.
(b) Conical flask, physical balance, ignition tube.
(c) Conical flask, physical balance.
(d) Conical flask, physical balance, a cork, ignition tube, thermometer.
31. What is the effect of buoyant force on the weight of a body immersed in a liquid? What are the quantities that can vary upthrust?
32. Why are curved sound boards and draperies used in auditoriums?
33. Give any three identifying features of *Spirogyra*.