

# CBSE Class 9 Science Sample Paper Set 4

**SUBJECT: SCIENCE**

**MAX. MARKS : 90**

**CLASS : IX**

**DURATION: 3 HRS**

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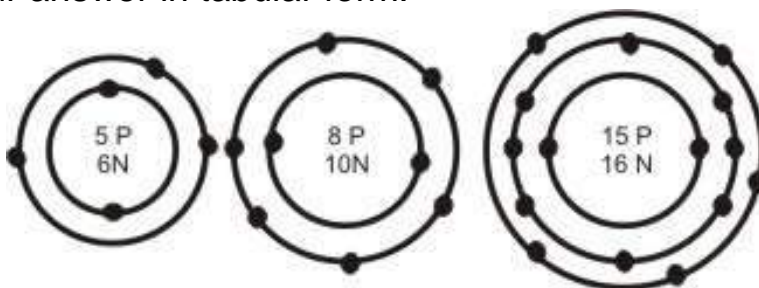
## SECTION – A

- Q.1. Name the S.I. Unit of Pressure. 1
- Q.2. Define the commercial unit of electrical energy. 1
- Q.3. In which type of plants are Nitrogen fixing bacteria present. 1
- Q.4. a). How did Rutherford come to the conclusion that most of the space in an atom is empty? 2
- b.) Why do isotopes of an element show similar chemical properties? 2
- Q.5. Find the relative density of copper block of mass 216g having volume of  $80\text{cm}^3$  (Density of Water =  $1\text{g}/\text{cm}^3$ ). 2
- Q.6. How do angiosperm differ from gymnosperms? Write one example each? 2
- Q.7. List any two differences between longitudinal waves and transverse waves. 2
- Q.8. List any three human activities which would lead to an increase in the carbon dioxide content of air. 3

Q.9. What information do you get from the figure given below about the atomic number, at mass number and valency of atoms X, Y and Z.

Give your answer in tabular form.

3



Q.10. Define Sanyam and Svasthya? How are the two related?

3

Q.11. Write the given statement in your answer books after filling in the blanks?

3

- Pila and Unio have an external shell and belong to the phylum\_\_\_\_\_.
- Free living marine animals with water driven tube system are in the phylum \_\_\_\_\_.
- To which phylum do sponges belong\_\_\_\_\_.

Q.12. Differentiate between monocots and dicots. Give two differences and one example of each?

3

- Q.13. (a) State the law of Constant Proportion.  
(b) In a compound Carbon and Oxygen react in a ratio 3: 8 by mass to form carbon dioxide. What mass of oxygen is required to repeated to react completely with 9g Carbon?

3

Q.14. (a) Calculate the number of molecules present in 4.4g of  $\text{CO}_2$ . [At Mass: C=12, O=16 u,  $N_A = 6.02 \times 10^{23} \text{ mol}^{-1}$ ]

(b) What are polyatomic ion? Give one example.

3

Q.15. (a) What are the conditions for work to be done?

- (b) An electric bulb of 60W is lighted for 10 hours a day. What is the amount to be paid in a month of 30 days, if one unit of electricity costs Rs. 3.50? 3
- Q.16. (a) On which characteristics of sound wave do the following properties depend? 1+2
- (i) loudness (ii) Pitch
- (b) Calculate the time for which the sensation of sound persists in our brain if the minimum distance of the obstacle from the source of sound is 17.2m (speed of sound in air = 344m /s)
- Q.17. (i) State 'Archimedes' principle'. 1+2
- (ii) The volume of 50g of a substance is  $20 \text{ cm}^3$ . If the density of water is  $1 \text{ gm cm}^3$ , will the substance float or sink?
- Q.18. (a) What is the causal organism for Swine flu? 1+2
- (b) Suggest two measures that the local authorities of your neighbourhood should take to bring down the incidence of diseases like malaria, typhoid and dengue?
- Q.19. List any three ways of preventing the spread of air borne diseases. 3
- Q.20. a) A child hears an echo from a cliff 4 seconds after the sound from a powerful cracker is produced. How far away is the cliff from the child. Speed of sound = (340 m/s).
- b) Derive a relation between wave length, frequency and wave velocity.
- Or
- Draw a neat labeled structure of human ear and its working. 5
- Q.21. Give reasons for the following:
- (a) Bryophytes are called "amphibians of the plant kingdom."
- (b) Spiders and scorpions are very different from each other but are placed in the same phylum –Arthropoda.

- (c) Platyhelminths and Nematodes possess a Pseudocoelom.

Write the name of the following:-

- (a) Body is segmented  
(b) Reptile which has four chamber heart. 5

Or

Write the main characteristics of phylum Porifera and Aves give one example of each with its diagram.

Q.22. An Element "X" has 13 protons, 13 electrons and 14 neutrons.

Answer the following questions:

- a) What is its atomic number of 'X'?
- b) Identify the element.
- c) What is its valency? What is the number of valence electrons is "X"?
- d) What is the type of ion formed by "X" ? Why?
- e) Name the scientists who discovered electrons and protons.

Or

- (a) Describe Bohr's model of an atom.
- (b) Draw a sketch of Bohr's model of an atom with 3 shells.
- (c) What was the drawback of Rutherford's model of an atom? 5

Q.23. (a) Prove the law of conservation of energy for a stone moving vertically down.

- (b) A boy of mass 50kg runs up a staircase of 45 steps in 9s. If the height of each step is 15cm, find his power [ $g = 10 \text{ ms}^{-2}$ ]

Or

- (a) Define the term 'kinetic energy'.
- (b) Derive an expression for kinetic energy for an object of mass 'm' moving with a velocity 'v'.
- (c) Certain force acting on a 20 kg mass changes its velocity from 5m/s to 2 m/s. Calculate the work done by the force. 5

- Q.24. (a) What are the green house gases? 5
- (b) Give a diagrammatic representation of Carbon Cycle in nature.

Or

- (a) List four main processes involved in the water cycle.
- (b) Give a diagrammatic representation of Nitrogen cycle in nature.

### SECTION – B

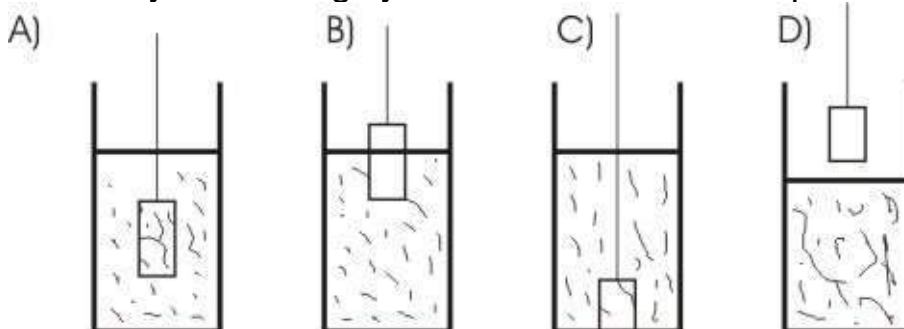
25. S.I. Unit of density is :-

- a)  $\text{g/m}^3$
- b)  $\text{kg/m}^2$
- c)  $\text{g/m}^2$
- b)  $\text{kg/m}^3$

26. The density of salty water as compared to the density of pure water is always.

- a) Less
- b) more
- c) same
- d) keep changing

27. In the experiment to find the density of a solid block, the volume is measured by measuring cylinder. The correct set up is shown in:-





35. To which group would a plant that Produces flowers belongs?
- a) Bryophyta                      b) Pteridophyta  
c) Gymnosperms                  d) Angiosperms
36. On which types of fishes are the gills covered with operculum?
- a) Bony fish                      b) Cartilaginous fish  
c) Both (a) and (b)              d) neither (a) nor (b)
37. The outer ear is called
- a) Pinna                          b) Malleus  
c) Incus                          d) stapes
38. Matter can neither be created nor be destroyed in law of:
- a) conservation of mass      b) Multi-proportion  
c) Constant proportion      d) None of these
39. Acid rain contains:-
- a) oxides of carbon              b) oxides of nitrogen  
c) oxides of carbon & sulphur      d) Oxides of nitrogen & sulphur
40. BCG vaccine is used to curb:
- a) Pneumonia                      b) Tuberculosis  
c) Polio                          d) Amoebiasis
41. Potential energy of a person is minimum when:
- a) Person is standing              b) person is sitting in a chair.  
c) Person is sitting on the ground      d) Person is lying on the ground.
42. An object of mass 5 kg falls from a height of 5 m above the ground. The loss of potential energy of the mass is:-
- a) 250 J                          b) 25 J  
c) 2.5 J                          b) 50 J