

SUMMETIVE ASSESSMENT – II (SAMPLE PAPER) SCIENCE CLASS – IX - 4

Max. Marks : 90

Time : 3 hrs.

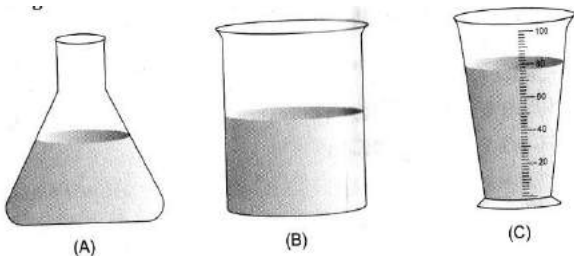
1. Define 1 W power. (1)
2. a) State the postulate of Dalton's atomic theory which supports the law of constant composition? b) Name the scientist who discovered the protons. (1)
3. Define an isotope and give one example. (1)
4. Name the following parts of the ear: (2)
 - a) The three bones that amplify the signals.
 - b) The part which converts the vibrations into electrical signals.
5. a) Write the chemical formulae of the following compounds: i) Zinc Nitrate ii) Magnesium Hydroxide
b) Name the following compounds: i) KOH ii) $Al_2(SO_4)_3$ (2)
6. a) Write any two differences between acute and chronic diseases.
b) Why we are advised to take bland and nourishing food when we are sick? (1+1)
7. Give reasons for the following: (1+1+1)
 - a) A truck has much wider tyres as compared to a car.
 - b) There is a decrease in weight of a solid when it is dipped inside a fluid.
 - c) An empty bottle bounces back to the surface when released under the surface of water.
8. Differentiate between positive and negative work. When you lift an object up, two forces act on it. Identify these forces. Which of these forces does a) positive work? b) negative work? (3)
9. A body of mass 5 kg is vertically thrown upwards with a speed of 10m/s. What is its kinetic energy? Find its potential energy at the highest point and also find the maximum height reached. (3)
10. Give reason for the following: (1+1+1)
 - a) Sound wave is a mechanical wave.
 - b) Roofs and walls of the halls are covered with wood.
 - c) Some animals get disturbed before an earthquake.
11. a) What is the full form of SONAR? b) A ship sends out ultrasound that returns from the seabed and is detected after 3.42s. If the speed of ultra sound through sea water is 1531m/s, what is the distance of the sea bed from the ship? (1+2)
12. a) Give any two conclusions of alpha ray scattering experiment. b) What was the drawback of Rutherford's atomic model? c) Draw a labelled diagram of Bohr's atom with three shells. (3)

13. a) Calculate the number of neutrons in ${}_{12}^{24}A$ b) Write the electronic configuration of ${}_{17}^{35}B$
- c) What is the valency of ${}_{7}^{14}C$ d) What is the number of valence electrons in ${}_{6}^{12}D$? e) Name the valence shell in ${}_{15}^{31}E$?
- f) An element F has 6 valence electrons predict whether it is a metal or a non-metal. (3)
14. a) What are lichens? b) Why do we keep snake and turtle in the same class? (any two reasons) (1,2)
- 15 Write any three differences between gymnosperms and angiosperms. (3)
16. a) We may catch common cold easily while sitting with a person but cannot catch diabetes even by hugging. Why?
- b) Becoming exposed to or infected with an infectious microbe does not necessarily mean developing noticeable disease. Explain. (1,2)
17. Neha's friend Sudha was not keeping well for last few months. She was taken to hospital where the doctor diagnosed that she is suffering from blood cancer. On hearing this, Neha's mother told Neha not to visit her friend Sudha as she is afraid that Neha may also get infected with blood cancer.
- i) Should Neha not visit Sudha? ii) What justification Neha will give to her mother for visiting her friend Sudha?
- iii) What are the chances of Sudha's recovery? (1+1+1)
18. i) Why female anopheles mosquito feeds on human blood? ii) Differentiate between signs and symptoms of a disease. (Any two) iii) Name two groups of microbes from which antibiotics could be extracted. (1+1+1)
19. a) Define gravitational potential energy. b) Two bodies of same mass start from rest and move with velocities v and $2v$ respectively. Find the ratio of their kinetic energies. c) A body of mass 4 Kg initially at rest is subjected to a force of 20N. Find the kinetic energy acquired by the body at the end of 10s. (1+2+2)
20. A 0.48g sample of compound of oxygen and boron was found by analysis to contain 0.192 g of boron and 0.288 g of oxygen. Calculate the percentage composition of the compound by weight.
21. a) Calculate the percentage of oxygen in H_2O_2 . b) Calculate the number of moles in 56g of nitrogen gas.
- c) Calculate the mass of 0.50 moles of Ca atoms. d) Find the number of particles in i) 5 moles of Methane gas ii) 92 g of sodium (5) [atomic masses: H=1, O=16, N=14, Ca=40, Na=23]
22. a) Give one word for the following:
- i) The left half and right of the body have same designs. ii) Metamerically segmented animals.
- b) State reasons for each of the following: i) Thallophyta, Bryophyta and Pteridophyta are called as 'cryptogams' while gymnosperms and angiosperms are 'phanerogams'. Discuss why? ii) Forelimbs of birds are modified.
- c) List any four common features in bat, cat and rat.
25. While studying Archimedes principle, a student recorded following observations: (1)
- Weight of the solid = w_1 Apparent weight of the solid when fully immersed in tap water = w_2

Weight of water displaced by the solid = w_3

The student would observe that, a) $w_1 = w_3$ b) $w_2 = w_3$ c) $w_1 = w_2 + w_3$ d) $w_2 = w_3 + w_1$

26. Using a spring balance, a given solid is weighed in the air. It is then weighed by immersing fully in water in each of the three vessels containing water as shown below. The apparent weight of the solid will be: (1)



- a) least in A b) least in B
c) least in C d) equal in all three cases.

27. While determining the density of a sphere a student noted down the following readings using a spring balance of least count 2g and measuring cylinder 2mL. Where did he make the mistake in taking the readings? (1)

- i) Mass of the sphere = 62g ii) Reading of water level in the cylinder without sphere in it = 61mL
iii) Reading of water level in the cylinder with sphere in it = 70mL

- a) step (i) b) step (ii) c) step (iii) d) step (ii) and (iii)

28. To find the velocity of the pulse in a string we need:

- a) only a measuring scale b) only a stop watch c) both (a) and (b) d) none of these.

29. The angle between incident and reflected sound wave is 130° . The angle of incidence is: (1)

- a) data insufficient b) 65° c) 130° d) 25°

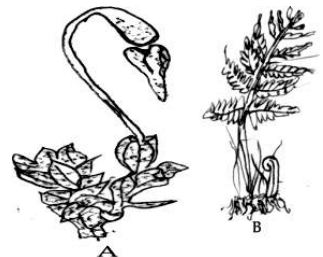
30. In an experiment for determining the velocity of propagation of a pulse in a slinky, we need a spring that is: (1)

- a) long, soft, and flexible b) short, soft, and flexible c) short, hard, and flexible d) long, soft, but not flexible

31. Which of the following substances is capable of subliming? a) Salt b) Camphor c) Sugar d) Sand (1)

32. Four students observed the specimens of two plants and sketched them as shown below. They noted in their notebook the identification and the names of the group to which these plants belong as given below. The correct identification is :

- a) A – moss ; Bryophyta B – fern ; Pteridophyta b) A – pine ; Gymnosperm B – leafy plant ; Angiosperm
c) Both A and B are moss and belong to Bryophyta
d) Both A and B are ferns and belong to Pteridophyta. (1)



33. Which of the following is correct observation about the seeds and flowers of gram plants?

- a) Monocotyledonous seeds and timerous flowers b) Monocotyledonous seeds and pentamerous flowers
c) Dicotyledonous seeds and trimerous flowers d) Dicotyledonous seeds and pentamerous flowers (1)

34. If 10g Barium Chloride is mixed with 15g of sodium sulphate, what will be the total mass of the products formed? Name the precipitate formed in the product. (2)

35. Give two points of how birds have adapted themselves to an aerial mode of life. (2)

36. Define Up thrust. List the factors on which up thrust acting over a body depend upon. (2)