Aarambh classes

Class IX

SCIENCE SAMPLE PAPER

Section A (1 mark questions )

1. The slope of a speed time graph gives :
2. Distance travelled (ii) velocity (iii) acceleration (iv) displacement 2. When a toothpaste is squeezed ,its shape changes .The force responsible for this is an example of :

(I) balanced forces (ii) centripetal forces (iii) unbalanced forces (iv) centrifugal forces

3. The rockets work on the principle of conservation of :

(I) mass (ii) energy (iii)momentum (iv) velocity

4. which one of the following is not the unit of energy ?

(I) joule (ii) newton metre (iii) kilowatt (iv) kilowatt-hour

5. when the pitch of note produced by a harmonium is lowered ,then the wavelength of the note :

(I) decreases (ii) first decreases and then increases (iii) increases (iv) remains the same

6. Which of the following is not a mixture ?

(i) kerosene (ii) air (iii) alcohol (iv) petrol

7. A particle X has 17 protons ,18 neutrons and 18 electrons .The particle is most likely to be :

(i) a cation (ii)an anion (iii) a molecule (iv) a compound

8. Elements having valency one are :

(i) always metal (ii)laways nonmetals (iii) always metalloids (iv) either metals or non metals

9. A mixture of milk and groundnut oil can be separated by :

(I) sublimation (ii) evaporation (iii) separating funnel (iv) filtration

10. The atomic number of an element X is 8 and element Y is 4 .Both these elements can exhibit a valency of :

(i) 1 (ii) 2 (iii) 3 (iv) 4

SECTION B (2 MARKS )

11. An element has 2 electrons in its M shell . What is the atomic number of the element ?

12. Why does a gunman get a jerk on firing a bullet ?

13. A racing car has auniform acceleration of 4 m/s.What distance will it cover in 10 sec after start ?

14. An element Z forms an oxide Z0 .What is the valency of element Z ? What will be the formula of fluoride of Z ?

15. Define gravitational constant .What is the unit of gravitational constant ?

16. Two bodies of equal masses move with uniform velocities v and 3v respectively .Find the ratio of their kinetic energies .

SECTION C (3 MARKS )

17. A source is producing 1500 sound waves in 3 seconds .If the distance covered by a compression and an adjacent rarefraction be 68 cm ,find (a) frequency (b) wavelength and © velocity ,of the sound wave .

18. Calculate the formula mass of potassium carbonate (KCO)(Given : Atomic masses :K= 39 u ;C= 12 u ; O=16 u)

19. Explain why air is considered a mixture and not a compound .

20. A car weighing 1000 kg and travelling at 30 m/s stops at adistance of 50 m decelerating uniformly .What is the force exerted on it by the brakes ?What is the work done by the brakes ?

21. Explain why wooden sleepers are kept below the railway lines .

22. When 3 g of carbon is burnt in 8 g of oxygen ,11 g of carbondioxide is produced .What mass of carbondioxide will be formed when 3 g of carbon is burnt in 50 g of oxygen ? Which law of chemical combination will govern your answer ?

SECTION D (5 MARKS EACH )

23. (a) Describe the Rutherford’s model of an atom .State one drawback of Rutherford’s model of the atom .

(b) The mass number of an element 8 is 23 .and it contains 11 electrons .What is the number of protons and neutrons in it ? What is the atomic number of the element ?

24. (a)Gravitational force acts on all objects in proportion to their masses .Why then,a heavy object does not fall faster than a light object ?

(b) What is the magnitude of the gravitational force between the earth and a1 kg object on its surface ?(Mass of the earth is 6 x10 kg and radius of the earth is 6.4 x10 m)

25. (a) A man claps his hands near a mountain and hears the echo after 4 seconds .If the speed of sound after these conditions be 330 m/s .Calculate the distance of the mountain from the man .

(b) What is the frequency of sound wave whose time period is 0.05 sec ?

26. (a) Derive the formula s =ut +½ at,where symbols have their usual meanings .

(b) A train starting from stationary position and moving with uniform acceleration attains aspeed of 36 km/h in 10 minutes.Find the acceleration .