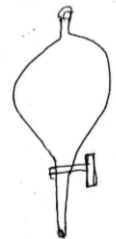


Science (Physics & Chemistry)

Class- IX
Section – A

MM : 70
1 X 5 = 5 marks

- Q1 What happens to the magnitude of the force of gravitation between two objects if – Mass of both objects as well as the distance between them is doubled ?
- Q2 Is the motion of moon around earth uniform acceleration ? Explain in one sentence ?
- Q3 Which of the following shows Tyndall effect :- starch solution, copper sulphate, milk.
- Q4 A particle size of substance X presenting water is 89 nm. What will be nature of solution expected.
- Q5 The melting points of two objects A and B are 300K and 350K respectively Which has more imparticle forces?
- 2 X 3 = 6marks
- Q6 A man weighs 490N on the surface of earth. What would be his mass and weight on the surface of moon ?
- Q7 solids are normally not compressible Why can sponge be readily pressed?
- Q8 an object thrown upwards ,rises to height of 10m Calculate velocity with which it was thrown upwards and time taken by an object to reach the highest point.
- 3X8= 24marks
- Q9 While driving Sam travels 30 km with a speed of 60 km/hr and next 30 km with a uniform speed of 20 km/hr. Find his average speed.
- Q10 Using Newton's universal law of gravitation and second law of motion, find the mathematical expression for acceleration due to gravity on the surface of any planet.
- Q11 Write three equation's of motion. Derive graphically the equation for position-time relation for an object travelling a distance 's' in time 't' under uniform acceleration.
- Q12 A bullet of mass 20g is fired horizontally with a velocity 100 ms^{-1} from a pistol of mass 1.5 kg. Calculate the recoil velocity of the pistol.
- Q13 The concentration of a salt solution in terms of mass by mass percentage is 25% and the mass of the water is 450 g. Determine the mass of solute present in the solution.
- Q14 Observe the apparatus shown below and answer the following questions.
A .Name the apparatus.
B .State one use of the apparatus.
C. State the principle involved in this process.
- Q15 Why does temp . remain same during its melting point or boiling point?
- Q16 Two bodies A and B of the same mass are moving with velocities v and $5v$ respectively. Compare their i) inertia ii) momentum iii) force needed to stop them in the same time



5 X 4 = 20marks

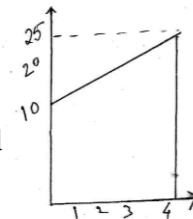
- Q17 Assuming that the mass of the earth is 100 times larger than the mass of moon and the radius of earth is about 4 times as that of moon, show that the weight of an object on moon is $1/6^{\text{th}}$ of that on earth.

OR

Explain in brief:

- Function of loading tank in water purification system.
- What is latent heat of fusion ? Why flow of cold water is allowed on burnt part of skin ?
- Basic difference between distillation and fractional distillation.

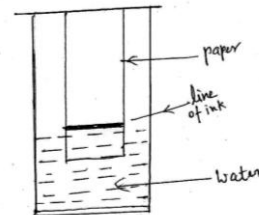
- Q18 The velocity time graph of a particle moving on the ground is shown in fig. If the mass of the particle is 100g Find the force acting on the particle and calculate the distance travelled by particle also .



- Q19 State the law of conservation of momentum with mathematical expression. Using this law Solve the problem “An object of mass 2 kg travelling in straight line with velocity 5 m/s collides with stationary wooden block of mass 8 kg then they move together in same straight line . calculate the velocity of combined object”

- Q20 i)Observe the fig . A line of ink made up of three different coloured components on paper and placed in jar containing water The paper was removed when water reached near the top

- Name the technique used
 - What do you expect to observe
 - Give one application of this technique
- ii) What happens if dry ice is left in open atmosphere?
Name the process



Section – B (MCQ)

1 X 15 =15 marks

- Q21 X is a mixture of iron filings and sulphur and Y is a product obtained by heating the mixture X and crushing it to a fine powder. On bringing a magnet over both X and Y Rahul observed that:

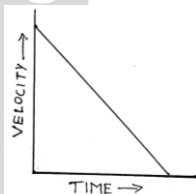
- | | |
|------------------------------------|-------------------------------------|
| (a) X and Y both are attracted. | (b) X is attracted while Y is not. |
| (c) Y is attracted while X is not. | (d) Both X and Y are not attracted. |

- Q22 Which will not take place when CS₂ is added to a mixture of iron filings and sulphur in a beaker ?

- Iron filings does not dissolve in CS₂
- Sulphur will dissolve forming a yellow solution
- Iron sulphide will be formed
- None of the above

- Q.23 Type of motion represented by graph

- Uniform Acceleration
- Uniform velocity
- Uniform retardation
- Non uniform velocity

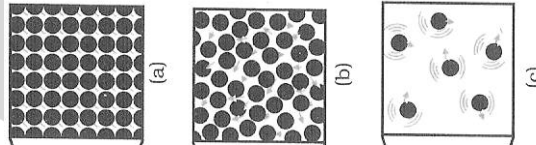


Q.24 The inertia of an object is measured by

- a. Velocity b. Momentum c. Mass d. Can not say

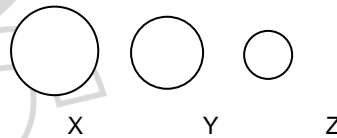
Q25 Fig. the magnified image of three states of matter choose the correct order.

- a. Liquid, Gas, Solid
b. Solid, Gas, Liquid
c. Solid, Liquid, Gas
d. Can not say



Q.26 Which represents the correct combination regarding the particles size of the solutions.

- a. Colloid – Y
b. Suspension – Z
c. True solution – X
d. None of the above



Q.27 Which of the following is not a chemical change?

- a. Rusting of iron b. Photosynthesis
c. Dyeing a cloth d. Breaking a glass beaker

Q28. The gas evolved when Zinc reacts with dilute sulphuric acid is :

- (a) colourless, odourless, combustible
(b) colourless, foul smelling, combustible
(c) colourless, pungent smelling, burns with a pop sound
(d) Brown coloured, pungent smelling, does not burn.

Q29. Seema heated a mixture of iron filings and sulphur in a hard glass test tube for some time till a grayish black product was formed. She cooled the test tube and added a few drops of carbon-di-sulphide and shake the contents well. Which of the following observation made by her was correct ?

- (a) The colour of the solution remains the same
(b) The solution turns blue
(c) The solution turns green
(d) The solution turns yellow

Q30. On heating copper sulphate crystals in a hard test tube it is observed that :

- (a) The substance sublimes. (b) Brown fumes are evolved.
(c) A grey mass is formed. (d) A white residue is left.

Q31. Which of the following characteristic of iron sulphide and mixture of iron filings+sulphur powder is correct ?

- (a) Both are heterogeneous
(b) Both are homogeneous
(c) A mixture of iron filing and sulphur powder may be heterogeneous or homogeneous but a iron sulphide is always homogeneous.
(d) Iron sulphide is heterogeneous but the mixture of iron filings and sulphur powder is homogeneous.

Q32. A thermometer has 20 equal divisions between 90°C and 100°C marks. A student while determining the boiling point of water finds that the mercury thread becomes stationary at the 19th mark above 90°C. He should record the boiling point of water as :

- (a) 90.19°C (b) 99.5°C (c) 109°C (d) 119°C

Q33. A student was asked to mix the white of an egg with water and stir well. The student observed that

- (a) a transparent solution is formed
(b) a translucent mixture is formed
(c) egg white settles down at the bottom
(d) egg white floats on the surface.

Q34. Distance traveled by an object in a given graph in 10hrs is

- (a) 80km (b) 160km (c) 80cm (d) 160cm

Q35. A gas can be liquefied at

- (a) low temp , low pressure (b) high temp, high pressure
(c) low temp, high pressure (d) high temp.,low pressure