

Class IX
Sample Paper 1

Time allowed: 3 hours

maximum Marks: 90

General Instructions:

1. The question paper comprises of two sections, A and B you are to attempt both the sections.
2. All questions are **compulsory**.
3. There is no overall choice. However, internal choice has been provided in all the three questions of five marks category. Only one option in such question is to be attempted.
4. All questions to section A and all questions of section B are to be attempted separately.
5. Question numbers 1 to 3 in section A are one mark questions. These are to be answered in one word or one sentence.
6. Question numbers 4 to 7 are two mark questions, to be answered in about 30 words.
7. Question number 8 to 19 is three mark questions, to be answered in about 50 words.
8. Question number 20 to 24 are five mark questions, to be answered in about 70 words.
9. Question numbers 25 to 42 in section B are multiple choice questions based on practical skills. Each question is a one mark question. You are choosing one most appropriate response out of the four provided to you.

SECTION A

- Q1. What is the value of latent heat of vapourisation of water? [1]
- Q 2. Why do we tie the luggage's with a rope on the roof of buses? [1]
- Q 3. Name the discover of (a) cell and (b) nucleus [1]
- Q4 (a) A diamond knife is quite often used for cutting glass. Why?
(b) Give example of the colloidal solution in which solid acts as the dispersed phase and gas as the dispersion medium. [2]
- Q 5. A nail is driven into a wooden board by using a hammer. The impact of the hammer on the head of nail produces a thrust of 25N. If the area of the head is 0.5 mm^2 and of the tip is 0.1 mm^2 , find the pressure on the head and the tip of the nail. [2]
- Q 6. Mention two functions of stomata. [2]
- Q 7. What is endocytosis? Give one example. [2]



- Q8. (a) We can easily move our hand in air but to do so the same through a solid block of wood we need a 'karate expert'. Explain.
(b) What types of clothes should we wear in summer? [3]
- Q9 (a) Solubility of sodium nitrate at 313 K is 60 g. What mass of sodium nitrate would be needed to produce a saturated solution of NaNO_3 in 50 g of water at 313 K? (b) What is the effect of change of temperature on the solubility of a salt? [3]
- Q 10. A car is moving on a straight road with a uniform acceleration. The following table gives the speed of the car at various instants of time. [3]
- | | | | | | | |
|----------------------------|---|----|----|----|----|----|
| Time (s) | 0 | 10 | 20 | 30 | 40 | 50 |
| Speed (ms^{-1}) | 5 | 10 | 15 | 20 | 25 | 30 |
- (i) Draw the shape of speed-time graph representing the above sets of observations.
(ii) Find the acceleration of the car.
- Q 11. (a) Define momentum of a body. [3]
(b) A ball is thrown vertically upward. What is its momentum at the highest point?
(c) State the law of conservation of momentum.
- Q 12. State universal law of gravitation. Write SI unit of G. The gravitational force between two objects is 100N. How should the distance between the objects be changed so that force between them becomes 50N? [3]
- Q 13. A ball is gently dropped from a height of 20 m. If its velocity increases uniformly at the rate of 10m/s^2 , with what velocity will it strike the ground? After what time will it strike the ground? [3]
- Q 14. A particle is thrown up vertically with a velocity of 50ms^{-1} . How high would the particle rise and what time would it take to reach the highest point?
($g = 10\text{ms}^{-2}$) [3]
- Q 15. What factors may be responsible for losses of grains during storage? Also mention any two preventive measures to control loss of grains during storage. [3]
- Q 16. Explain that livestock production needs to be improved. Why there is necessity of Animal Husbandry? [3]
- Q 17. Draw a well labeled diagram of phloem tissue. [3]
- Q 18. Write three main difference between a prokaryotic cell and eukaryotic cell? [3]
- Q 19. What are the three types of muscle tissue. [3]
- Q20 Give any five points of difference between true solution, colloidal solution and suspension. [5]

OR



Q20 (a) Identify solute and solvent in the following solutions:

- (i) Aerated drinks
- (ii) Tincture of iodine
- (iii) Lemon water

(b) State the principle of each if the following methods of separation of mixtures.

- (i) Centrifugation method
- (ii) Separation using separating funnel. [5]

Q21 (a) Write any two points of differences between chemical and physical change?

(b) State one instance where water undergoes a physical change and one in which undergoes a chemical change.

(c) Which of the following substance can sublime: camphor or water? [5]

OR

Q21 (a) Which is more effective in cooling ice at 0°C or water at 0°C ? Explain

(b) Why do we feel relief under fan after perspiring? [5]

Q 22. (a) How much momentum will a dumbbell of mass 20 kg transfer to the floor if it falls from a height of 1m?

Take its downward acceleration to be 10 m/s^2 .

(b) The earth attracts a ball with a force of 1 N. If this is the force of action, what would be the force of reaction and who exerts this force? [5]

OR

(a) Write the three essential characteristics of the forces to be classified as action-reaction forces.

(b) A cannon of mass 1000 kg launches a cannonball of mass 10 kg at a velocity of 100 m/s. At what speed will the cannon recoil? [5]

Q 23. (a) How does uniform linear motion differ from uniform circular motion? Give two points of difference.

(b) A bus travels a of distance 120 km with a speed of 40 km/h and returns with a speed of 30 km/h. Calculate the average speed for the entire journey. [5]

OR

(a) While driving Jayant travels 30 km with a speed of 40 km/h and next 30 km with a uniform speed of 20 km/h. Find his average speed.

(b) A train 100 m long is moving with a velocity of 60 kmh^{-1} . Find the time it takes to cross the bridge 1 km long. [5]

Q 24 (a) How do biotic and abiotic factors affect crop production?

(b) How do plants get nutrients?

(c) What is pasturage? [5]

OR

(a) What are the advantages of intercropping and crop rotation? Mention any two points.



(b) Which method is commonly used for improving cattle breeds and why?

(c) What is meant by hybridization?

[5]

SECTION B

Q25. When dispersing medium is liquid and dispersed phase is a gas, it is called

- a) Aerosol
- b) Sol
- c) Gel
- d) Foam

Q26. 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 solution is formed
- (c) Egg white settles down at the bottom
- (d) Egg white floats on the surface

Q27. Add dil H_2SO_4 to a mixture of iron and sulphur, we would observe

- (a) FeS reacts with dil Sulphuric acid to give H_2 gas
- (b) Mixture of iron and Sulphur reacts with dil. Sulphuric acid to give hydrogen gas
- (c) FeS does not react with sulphuric
- (d) Mixture of iron and sulphur reacts with sulphuric acid to give hydrogen gas.

Q28. When iron and sulphuric are heated at high temperature

- (a) Yellow coloured iron sulphide formed
- (b) Black coloured FeS is formed
- (c) Mixture of iron and sulphur is formed
- (d) They do not react

Q29. While determining the boiling point of water pumice stone pieces is added to:

- (a) Spread the heat uniformly
- (b) Prevent loss of heat energy
- (c) To avoid bumping
- (d) Copper avoid cracking of the glass container

Q30. The melting point of pure ice is

- (a) 0°C
- (b) 1°C
- (c) -1°C
- (d) 4°C



Q31. The colour of the pure ammonium chloride is

- (a) White
- (b) Blue
- (c) Green
- (d) red

Q32. In the laboratory, what precautions has to be taken with carbon disulphide?

- (a) Keep away from flame.
- (b) Keep away from carbon.
- (c) Keep away from distilled water.
- (d) Keep way from iron sulphide.

Q33. When lead nitrate decomposes, it produces brown fumes of

- a) NO
- b) NO_3
- c) NO_2
- d) HNO_2

Q34. Which is not observed when carbon disulphide is added to a mixture of iron filings and sulphur powder taken in a boiling tube?

- (a) Iron filings will remain unaffected.
- (b) Sulphur powder will dissolve to give a yellow solution.
- (c) Sulphur powder will remain unaffected
- (d) Iron sulphide (FeS) will not be formed.

Q 35. The sum of the forces acting on two spring balances is always

- (a) Positive
- (b) Zero
- (c) Negative

Q 36. Least count of a spring balance is 1 kgwt. per division. If the reading on this spring balance is 5 div, the force acting on it will be,

- (a) 5 N
- (b) 5 dyne
- (c) 5g N
- (d) 5g dyne

Q 37. On the laboratory table were placed four watch glasses with labels A, B, C and D. Watch glass 'A' had chalk powder 'B' had chalk powder 'B' had sago powder, 'C' had common salt and D had powdered sugar. On adding two drops of iodine to the content of each watch glass the one turning blue black will be:

[1]



- (a) A
- (b) B
- (c) C
- (d) D

Q 38. Four samples of arhar dal were taken in four test tubes with some water in each and labeled P, Q, R and S. A few drops of the following were added to these test tubes, water to test tube P, HCl to test tube Q, NAOH to test tube R and alcohol to test tubes S. We would be able to confirm adulteration of the dal with mentanil yellow in test tubes:

[1]

- (a) P and Q
- (b) Q and R
- (c) R and S
- (d) S and P

Q 39. Given below are four operations for preparing a temporary mount of human cheek cells:

[1]

- (a) taking scraping from inner side of the cheek and spreading it on a clean side.
- (b) putting a drop of glycerine on the material
- (c) adding two or three drops of methylene blue
- (d) rinsing the mouth with fresh water and disinfectant solution

The correct sequence of three operations is:

- (a) a - b - c - d
- (b) d - a - c - b
- (c) d - a - b - c
- (d) a - c - b - d

Q 40. Human cheek cells stained in methylene blue and mounted in glycerine were observed with the help of a compound microscope. The Components of the cell which would be seen are:

[1]

- (a) cell wall, cytoplasm, nucleus
- (b) plasma membrane, cytoplasm, nucleus
- (c) plasma membrane, cytoplasm, nucleus, mitochondria
- (d) plasma membrane, cytoplasm, nucleus, mitochondria, golgi bodies, lysosomes

Q 41. You are shown two slides of plant tissues parenchyma and sclerenchyma you can identify the sclerenchyma by the: [1]

- (a) location of nucleus
- (b) thickness of cell wall
- (c) size of cells
- (d) position of vacuoles

Q 42. Gurjot observed nerve cells under the microscope, and made a sketch. The mistake in his drawing is the cyton with [1]

- (a) cilia
- (b) dendrites
- (c) nucleus
- (d) cytoplasm