

**SAMPLE PAPER (TERM-I), 2019-20**

**CLASS IX**

**SCIENCE**

**Time: 3Hours**

**Max.Marks : 80**

---

**General Instructions:**

- i) The question paper comprises four sections, A ,B,C and D. You are to attempt all the sections.
- (ii) All questions are compulsory.
- (iii) Choices are given in two 3 mark question and one 5 mark question.
- (iv) All questions are to be attempted separately.
- (v) Question numbers 1 to 20 in Section - A are one mark question. They are to be answered in one word or in one sentence.
- (vi) Question numbers 21 to 30 in Section - B are three marks questions. These are to be answered in 30 words each.
- (vii) Question numbers 31 to 34 in Section - C are five marks questions. These are to be answered in about 70-80 words each.
- (viii) Question numbers 35 to 38( Practical based questions) in Section-D are three marks questions. These are to be answered in 30 words each.

---

**Section A**

**Q1.Choose the correct answer from the following:**

**(1X6=6)**

- (i) Squamous epithelial tissue is found:
  - a) Around digestive lining
  - b) In skin
  - c) Esophagus lining
  - d) All of the above
- (ii) A water tanker filled up to  $\frac{2}{3}$  of its height is moving with a uniform speed. On sudden application of brakes, the water in the tank would
  - a) move backward
  - b) move forward
  - c) move upwards
  - d) remain unaffected
- (iii)The cell division, in which chromosome no become half is:
  - a) Mitosis
  - b) Meiosis
  - c) Both (a) and (b)
  - d) Cytokinesis
- (iv) Suppose a girl is enjoying a ride on a giant wheel in a fair which is moving with a constant speed of 20 m/s. It implies that the girl is
  - a) at rest
  - b) moving with no acceleration
  - c) in accelerated motion
  - d) moving with uniform velocity
- (v)Tincture of iodine has antiseptic properties. This solution is formed by dissolving:

- a) Iodine in potassium iodide.
- b) Iodine in Vaseline.
- c) Iodine in water.
- d) Iodine in alcohol.

(vi) Which of the following are homogeneous in nature?

Ice, wood, soil, and air

- a) Ice and soil
- b) Wood and soil
- c) Wood and air
- d) Ice and air

**Q2. Answer the following questions in one word / a sentence:**

**(1X8=8)**

- (i) Lysosomes are known as “**Digestive bags**”. Justify.
- (ii) In what respect does a true solution differ from colloidal solution?
- (iii) Why we wear cotton clothes in summer?
- (iv) An unknown substance ‘A’ on thermal decomposition produces ‘B’ and ‘C’. What is ‘A’  
An element, compound or a mixture?
- (v) Name an Indian poultry bird.
- (vi) Define 1 Newton force.
- (vii) When is the acceleration taken as negative?
- (viii) The earth is acted upon by gravitation of sun, even though it does not fall into the sun.  
Why?

**Q3. For the following statements, a reason is given. Choose the correct option from the given statement for the questions given below**

**(1X6=6)**

- a) Both the assertion and reason are true and reason is correct explanation of the assertion
- b) Both the assertion and reason are true but reason is not the correct explanation of assertion
- c) Assertion is true, reason is false
- d) Assertion is false but reason is true

(i) **Assertion (A):** The wings of a bird push air downwards and the air must be pushing the bird upwards.

**Reason (R):** For every action there is an equal reaction in the same direction.

(ii) **Assertion (A):** When distance between two bodies is doubled and also mass of one object is doubled, the gravitational force between them becomes half.

**Reason (R):** According to Newton's law of gravitation, force is directly proportional to masses of the bodies and inversely proportional to the square of the distance between them.

(iii) **Assertion (A):** Glandular epithelium is present near the glands.

**Reason (R):** Goblet cells present in glandular epithelium helps in secretion of substances.

(iv) **Assertion (A):** Cytoplasm is known as chemical factories of the cell.

**Reason (R):** Cytoplasm is not an integral part of the cell, and is usually not present in all the cells.

(v) **Assertion (A):** Gases are compressible.

**Reason(R):** Gases have high intermolecular space.

(vi) **Assertion (A):** Mercury is denser than water.

**Reason(R):** Mixture of miscible liquids can be separated by distillation.

### Section B

- Q4.** a) Differentiate between bone and cartilage. (Any two points) (3)  
b) Draw a well labeled diagram of epidermal layer of leaf showing stomata.

**OR**

- a) Draw a neat diagram of the vascular tissue responsible for conduction of water and minerals.  
b) Analyze the difference between sclerenchyma and collenchyma tissue on the basis of their functions and the composition of cell wall.

**Q5.** A body starts from rest and attains a velocity of 12 m/s in 30 seconds. If final velocity becomes 8m/s, what will be the de-acceleration after 5 seconds? (3)

**OR**

An object starting from rest travels 20 m in first 2 s and 160 m in next 4 s. What will be the velocity after 7s from the start?

- Q6.** (a) What do you understand by inertia of an object? (3)  
(b) Explain, why the vehicles like bikes, cars are fitted with shockers.

**Q7.**(a) Write two differences between acceleration due to gravity (g) and universal gravitation constant (G).

(b) Mona weighs 750 N on earth:

(i) On planet Mars, the force of gravity is 38% of that on earth. How much Mona will weigh on Mars?

(ii) Will Mona's weight is more on equator or poles? Give justification of your answer. (3)

**Q8.** a) Explain the structure and function Mitochondria.

b) Differentiate between the two types of endoplasmic reticulum (any two points). (3)

**Q9.** a) Explain the characteristics and types of Meristematic tissue in plants.

b) Explain the structure of the epithelial tissue present in the skin with the help of a diagram. (3)

**Q10.** a) Why Italian bee is better than the Indian bee variety?

b) How can we improve the variety of cattle breeds? (3)

**Q11.** Comment on following statements:

a) Evaporation causes cooling.

b) Sponge though compressible is a liquid.

c) Sugar crystals dissolve faster in hot water than in cold water. (3)

**Q12.** During an experiment the students were asked to prepare a 10% (Mass/Mass) solutions of sugar in water. Rahul dissolved 10 g of sugar in 100 g of water while Sonia prepared it by dissolving 10g of sugar in water to make 100 g of the solution.

- (a) Are the two solutions of the same concentrations?
- (b) Compare the mass % of the two solutions. (3)

**Q13.** Fractional distillation is suitable for separation of miscible liquids with a boiling point difference of about 25 K or less .What part of fractional distillation apparatus make it efficient and possess an advantage over a simple distillation process? Explain using a diagram. (3)

**OR**

State the principle of separating two immiscible liquids by separating funnel. Describe an activity with diagram to separate a mixture of water and kerosene oil.

### Section C

- Q14.** a) What are weeds?  
b) Mention the best time to remove the weeds.  
c) Discuss various methods to remove weeds. (5)

**OR**

- a) What is organic farming?
- b) Differentiate the types of nutrients required by the plants.
- c) Discuss the sources from where the plants obtain these nutrients.

**Q15.** (a) What do you mean by free fall?

(b) A stone is allowed to fall from the top of a tower 200 m high and at the same time another stone is projected vertically upwards from the ground with a velocity of 50 m/s. Calculate when and where the two stones will meet.

(c) According to Newton's third law of motion, a ball falling towards earth exerts a force on the earth but the motion of the earth towards the ball is not noticed. Explain why? (5)

**Q16.** (a) Define momentum. Derive the mathematical relation of Newton's second law of motion.

(b) A bullet of 10 g strikes a sand bag at a speed of  $10^3$  m/s and gets embedded after travelling 5 cm. Calculate:

- (i) The resistive force exerted by the sand on the bullet
- (ii) The time taken by the bullet to come to rest. (5)

**OR**

(a) State law of conservation of momentum.

(b) A bullet of mass 15 g leaves the barrel of a gun with a velocity of 120 m/s. The gun recoils with a velocity of 1m/s. find the mass of the gun.

(c) Law of conservation of momentum has been deduced from Newton's third law of motion. Give one example of Newton's third law of motion and explain it in terms of the law of conservation of momentum.

**Q17.**a) State the principle used in separating dyes in black ink using chromatography? Explain with the help of diagram.

b) Give any one point to differentiate between:

(i) Physical and chemical changes.

(ii) Elements and compounds.

(5)

**OR**

a) Draw a suitable diagram to show the purification of water? Explain loading briefly?

b) Give any one point to differentiate between:

(i) Evaporation and boiling.

(ii) Homogeneous mixture and heterogeneous mixture.

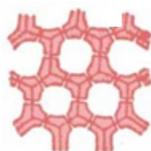
### **Section D**

**Q18.** Why is it advised to rub magnesium ribbon with sand paper before burning in air? (1)

**Q19.** a) Discuss the precautions you have to take, while preparing temporary mount of onion peel cells. (Any two)

b) Name the cell organelle, which a student is likely to observe in the temporary mount of cheek cells through a compound microscope. (3)

**Q20.** Identify the following tissue shown in the given diagram and mention any two characteristics of the same: (3)



Transverse section

**Q21.** (a) 'X' is a mixture of iron filings and Sulphur and Y is a product obtained by heating Both the mixture 'X' and crushing it to a fine powder. On bringing the magnet over 'X' and 'Y' what will happen.

(b) What will happen when iron nail is put in copper sulphate solution?

(c) What is the name and nature of white ashes formed by burning magnesium ribbon? (3)

