

**DAV BR PUBLIC SCHOOL, BINA**  
**Practice Paper Session 2023-24**  
**Class IX Subject Science**

**Time Allowed 3 Hrs**

**MM:80**

**General Instructions:**

- i. This question paper consists of 39 questions in 5 sections.
- ii. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
- iii. Section A consists of 20 objective type questions carrying 1 mark each.
- iv. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
- v. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
- vi. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
- vii. Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts

**SECTION - A**

Select and write one most appropriate option out of the four options given for each of the questions 1 – 20

1. The rate of diffusion will be higher in: **1**  
a) liquids                      b) Solids                      c) both a and b                      d) gases
2. Under normal condition, the maximum temperature that can be achieved by heating water is : **1**  
a) 100°C                      b) 120°C                      c) 0°C                      d) above 120°C
3. The correct symbol of sodium element is: **1**  
a) Na                      b) Sa                      c) NA                      d) d. S
4. The constituent charged particles present in Sodium chloride are: **1**  
a) negatively charged sodium ion and positively charged chloride ions.  
b) positively charged sodium ion and positively charged chloride ions.  
c) negatively charged sodium ion and negatively charged chloride ions.  
d) positively charged sodium ion and negatively charged chloride ions.
5. The subatomic particles and their correct representation is **1**

- i. Proton (P<sup>-</sup>)    ii. Proton (p<sup>+</sup>)    iii. Electron (e<sup>+</sup>)    iv. Electron (e<sup>-</sup>)
- a) i and iii                      b) ii and iii                      c) ii and iv                      d) i and iv
- 6.** The number of valence electron in an atom having atomic number 14 is: **1**  
a) 2                                  b) 4                                  c) 8                                  d) 14
- 7.** Generally, Nucleus of the plants cell are not centrally located due to: **1**  
a) large sized vacuoles                                  b) insufficient space in the cell.  
c) small sized vacuoles                                  d) none of the above
- 8.** *Xanthium* and *Parthenium* are examples of **1**  
a) Pesticides                      b) Diseases                      c) Pathogens                      d) Weeds
- 9.** Which is not a connective tissue: **1**  
a) Blood                      b) Cartilage                      c) smooth muscle                      d) bone
- 10.** The relation between speed (v) ,wavelength ( $\lambda$ ) and frequency ( $\nu$ ) of a sound wave is: **1**  
a)  $v = \lambda \times \nu$                       b)  $\lambda = v \times \nu$                       c)  $v = \nu/\lambda$                       d)  $\lambda = \nu + \nu$
- 11.** Cattle husbandry is done for: **1**  
i. increasing milk production.    ii. increasing meat production.  
iii. agriculture work                      iv. egg production  
a) i,ii and iii                      b) i and ii                      c) ii,iii and iv                      d) i, iii and iv
- 12.** Note is: **1**  
a)a sound of single frequency.    b)a sound of mixture of several frequencies.  
c)a sound of two frequencies.    d)unpleasant to hear.
- 13.** Universal Law of Gravitation does not explain: **1**  
a)the force that binds us to the earth.  
b)motion of moon around the earth  
c)the tides due to the moon and the sun.  
d)volcano eruption.
- 14.** The intercellular space is present in: **1**  
a) Parenchyma                      b) Collenchyma                      c) Sclerenchyma                      d) Epidermis
- 15.** Which is not an accelerated motion: **1**  
a) uniform velocity                                  b) constant velocity  
c) both a and b                                  d) circular motion
- 16.** A student placed an onion partially dipped in water. After few days she observed the roots, which grow in size. The tissue present on the tip of these roots is: **1**  
a) Apical meristem                                  b) Intercalary meristem

c) Lateral meristem

d) Both a and b .

**Q. no 17 to 20 are Assertion - Reasoning based questions.**

**These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:**

a) Both A and R are true and R is the correct explanation of A

b) Both A and R are true and R is not the correct explanation of A

c) A is true but R is false

d) A is False but R is true

**17. Assertion (A):** Tyndall effect can be observed when beam of light passes through a colloidal solution. **1**

**Reason (R):** The particles of colloidal solution are very small but can easily scatter a beam of light.

**18. Assertion (A):** Lysosomes are known as cleaner of the cell. **1**

**Reason (R):** Enzymes present in the lysosomes are powerful enough to Breakdown all organic materials.

**19. Assertion (A):** A sharp axe cut swiftly. **1**

**Reason (R):** The effect of the thrust depends on the area on which it acts.

**20. Assertion (A):** Weeds are harmful to the crop. **1**

**Reason (R):** Unwanted plant in the field competes for nutrient with the crop.

### SECTION – B

**Q. No. 21 to 26 are very short answer questions.**

**21.** During a chemical reaction the temperature in the test tube increased to 303K. **2**

a) Convert this temperature to °C scale

b) what will be the physical state of water at this temperature

**22.** In the given picture, a organelle is shown which is directly connected to the nucleus. **2**

a) Identify the organelle and the particle R attached to this organelle.



b) Write the main function of **R**.

**23.** While moving on a circular path of 10 m. What will be the distance and displacement of an object after completing 15 tum. **2**

**24.** Which among the following will you use to put water in it during summer season and why? **2**



- 25.** A person fires a gun standing at a distance of 55 m from a wall. If the speed of sound is  $330 \text{ ms}^{-1}$ , find the time for an echo to be heard. **2**

**OR**

Which wave property determines: (a) loudness, (b) pitch ?

- 26.** a) A student writes the electronic configuration of an atom having atomic number 16 as: 6,2,8. Is it correct? Explain. **2**  
b) How many electrons can be filled in L shell of an atom?

**SECTION - C**

**Q.No. 27 to 33 are short answer questions**

- 27.** a) How are isotopes different from isobars? **3**  
b) Write three applications of Isotopes.
- 28.** a) Which gases are exchanged at the site of the cell in animals? **3**  
b) Why cell is called the structural and functional unit of life?
- 29.** Name the functional unit of nervous system. Also draw its labelled diagram. **3**

**OR**

Why blood is called connective tissue? What are its components?

- 30.** A bike starting from rest attains a uniform velocity of  $36 \text{ km/h}$  in 3 minute. **3**  
Find:  
a) The acceleration and  
b) The distance travelled by the bike for attaining this velocity.

**OR**

A bus travels from destination A to B with a speed of  $36 \text{ km/h}$  and then returns back to A with a speed of  $72 \text{ km/h}$ . Find

- a) average speed of the bus.  
b) distance travelled by the bus if it takes 3 hours to complete the journey.  
c) displacement of the bus.
- 31.** The mass of the mars is  $6.42 \times 10^{23} \text{ kg}$  and that one of its moon is  $1.08 \times 10^{15} \text{ kg}$ . If the distance between the mars and its moon is  $1.01 \times 10^5 \text{ km}$ , calculate the force exerted by the mars on the moon. ( $G = 6.7 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$ ) **3**
- 32.** A girl of mass  $35 \text{ kg}$  runs up a ladder of 12 steps in 10s. If the height of each step is 20 cm, find his power. **3**
- 33.** What are different cropping patterns adopted to maximize benefits? Discuss any three. **3**

**SECTION - D**

**Q.no. 34 to 36 are Long answer questions.**

**34.** Write down the chemical formulae of the following compound. Also write the Ions (cation and anions) present in them. **5**

- a) sodium nitrate      b) ammonium sulphate      c) Aluminium oxide

**OR**

- a) What are Ions? Explain with examples.  
b) State the law of constant proportion. What is the ratio by mass of carbon and oxygen present in carbon dioxide compound? Define Atomicity.

**35.** During an experiment Reema placed few raisins in a liquid. After some times she observed that shape of raisins is changed as shown in the picture. **5**



- a) What could be the nature/Type of the solution in which these raisins were placed. Explain the reason for this change.  
b) What will happen if we put these (swollen) raisins in a highly saturated sugar solution.

Or

Draw a neat labelled diagram of Plant cell. (label at least six part)

**36.** Give reason: **5**

- a) In which direction does the passenger fall when a bus accelerates from rest.  
b) A fielder pulls his hand gradually with the moving ball while holding a catch.  
c) Which will have greater momentum between a truck or a car moving with same velocity? and why .

### **SECTION - E**

**Q.No. 37 to 39 are case - based/data -based questions with 2 to 3 short sub - parts.**

**Internal choice is provided in one of these sub-parts.**

**37.** Mixtures are constituted by more than one kind of pure form of matter, known as a substance. Depending upon the nature of the components that form a mixture we can have different types of mixtures i.e. homogeneous and heterogeneous mixtures. **4**

- a) A student mixed few drops of egg white in 50ml of water in a test tube. What type of mixture will be formed inside the test tube?  
b) Classify the following into mixture and compound:  
c) blood, soil, air, water, milk, common salt  
d) How will you form a suspension mixture?

**OR**

Burning candle is an example of both physical and chemical change.

Explain.

- 38.** During a sport event an athlete runs very fast and wins the race but just after crossing the finishing line, he meets with an accident. During medical examination it is found that his leg bone gets fractured and ligament is teared.

**4**

Answer the following:

- What is ligament?
- How muscles are attached to the bone?
- Is bone a connective tissue, answer on the bases of its structure.

**OR**

Name a tissue located at the head of the bone which protect them from wearing and tearing. This tissue is also present in the nose and outer ear. Write its two characteristics

- 39.** Different form of energy can be changed from one form to another, so that the total energy of a system during or after the transformation remains the same. During free fall of an object its potential energy will change into kinetic energy. A student dropped an object of mass 20 kg from a height of 4 m and tabulated the energy conversion as shown below: ( $g = 10\text{ms}^{-2}$ )

**4**

Height at which object is located (Meter)	Potential energy $E_P = mgh$ (Joule)	Kinetic energy $E_K = \frac{1}{2}mv^2$ (Joule)	$E_P + E_k$ Joule
4	800	0	800
3	600	A	800
2	400	400	800
1	200	D	800
Just above the ground	0	800	800

**Answer the following questions:**

- Write the energy transformation in above case.
- In the above case when will the kinetic energy of the object is minimum and Maximum?
- Complete the above table by calculating the values of A and D.

**OR**

- What will be the potential energy and kinetic energy of the above object at a height of 6m?

\*\*\*\*\*