

**ST. PBN PUBLIC SCHOOL, GURUGRAM**  
**CLASS XI**  
**SAMPLE PAPER (UT-2)**  
**SUBJECT – ENGLISH**

**TIME: 2 HRS**

**MM: 50**

**GENERAL INSTRUCTIONS:**

1. **All questions are compulsory.**
2. **Read all instructions carefully.**

Q1. Read the following passage carefully:

**(10 Marks)**

1. The ocean is an integral part of Earth's biosphere, covering more than 70% of its surface. It regulates global climate, provides a home for diverse marine life, and serves as a critical source of food and oxygen. However, the ocean faces numerous threats, including pollution, overfishing, and climate change.
2. Plastic pollution is one of the gravest challenges. Millions of tons of plastic waste enter the ocean annually, endangering marine species and damaging ecosystems. Sea turtles often mistake plastic bags for jellyfish, while seabirds ingest small plastic pieces, causing internal injuries and starvation.
3. Overfishing disrupts the balance of marine ecosystems. Unsustainable fishing practices, such as trawling and the use of massive nets, deplete fish populations and harm other marine organisms. The extinction of certain species can have cascading effects throughout the ecosystem.
4. Rising sea temperatures and ocean acidification, resulting from increased greenhouse gas emissions, threaten coral reefs and other marine habitats. Coral bleaching, a process where corals lose their vibrant color and become vulnerable to death, is a direct consequence of this phenomenon.
5. Organizations and governments worldwide are implementing measures to combat these challenges. Beach clean-up drives, stricter fishing regulations, and reduced carbon emissions are critical steps toward ensuring a sustainable future for our oceans.

**Questions:**

- (i) Which of the following is the primary focus of the passage?
  - (a) The benefits of oceans in our lives
  - (b) The threats to oceans and their ecosystems
  - (c) The importance of marine tourism
  - (d) The process of coral bleaching
- (ii) According to the passage, what do sea turtles often mistake for jellyfish?
  - (a) Fishing nets
  - (b) Plastic bags

- (c) Coral fragments
  - (d) Small plastic bottles
- (iii) What does the term “unsustainable fishing practices” refer to?
- (a) Fishing with small nets
  - (b) Fishing practices that damage marine ecosystems
  - (c) Catching fish with traditional methods
  - (d) Fishing in freshwater bodies
- (iv) Identify the word from Para 2 that means “causing severe harm or suffering.”
- (a) Endangering
  - (b) Disrupting
  - (c) Cascading
  - (d) Acidification
- (v) Select the option that correctly relates to marine pollution’s impact as per the passage:
- (a) Marine pollution increases coral reef growth.
  - (b) Marine pollution harms marine life and damages ecosystems.
  - (c) Marine pollution boosts fishing practices.
  - (d) Marine pollution makes the ocean warmer.
- (vi) Why is overfishing described as harmful in the passage?
- (a) It affects freshwater ecosystems.
  - (b) It leads to an abundance of fish populations.
  - (c) It disrupts marine ecosystems and causes species extinction.
  - (d) It increases ocean acidity.
- (vii) Which word in the passage refers to a harmful process affecting corals?
- (a) Bleaching
  - (b) Overfishing
  - (c) Plastic
  - (d) Habitat
- (viii) What measures are being taken to protect oceans, as mentioned in the passage?
- (a) Eliminating fishing altogether
  - (b) Encouraging coral bleaching
  - (c) Reducing carbon emissions and stricter regulations
  - (d) Introducing more fishing activities
- (ix) What is the primary reason for rising sea temperatures, as per the passage?
- (a) Plastic pollution
  - (b) Increased greenhouse gas emissions

(c) Coral reef expansion

(d) Overfishing

(x) Which of the following can be inferred from the passage?

(a) The health of oceans directly impacts global biodiversity.

(b) Ocean pollution benefits marine life.

(c) Coral reefs thrive in warmer waters.

(d) Overfishing does not harm marine ecosystems.

Q2. Ramesh Gupta, residing at 48 Green Avenue, Chandigarh, wants to rent out his 3-BHK apartment in Sector 22, near the city center. Draft a suitable classified advertisement in not more than 50 words. (5 Marks)

Q3. Write a speech to be delivered during the morning assembly on the topic "The Role of Youth in Nation-Building." You are Aditya/Ananya. (10 Marks)

Q4. Rearrange the following words or phrases to form meaningful sentences: **(5 Marks)**

(a) is / never / too / late / it / start / to

(b) our / valuable / air / trees / to / atmosphere / are

(c) the / choose / career / wisely / future / our / shapes

(d) sharing / makes / life / joy / beautiful / and / caring

(e) process / learning / throughout / a / life / is

Q5. Fill in the blanks with correct tense forms of the verbs given in brackets: **(4 Marks)**

(a) She \_\_\_\_\_ (visit) her grandparents every summer.

(b) The train \_\_\_\_\_ (depart) from the station 10 minutes ago.

(c) By the time we reached, the meeting \_\_\_\_\_ (end).

(d) The students \_\_\_\_\_ (prepare) for their exams all week.

(e) He \_\_\_\_\_ (work) in this company since 2015.

(f) They \_\_\_\_\_ (plan) to go on a vacation next month.

(g) She \_\_\_\_\_ (read) a book when I entered the room.

(h) He \_\_\_\_\_ (not finish) his homework yet.

Q6. Read the extract and answer the questions that follow: **(4 Marks)**

"I do not understand this child

Though we have lived together now

In the same house for years. I know

Nothing of him, so try to build

Up a relationship from how

He was when small."

### Questions:

1. What does the speaker express about his relationship with the child?

2. What does the speaker mean by "I know nothing of him"?
3. Why does the speaker mention "how he was when small"?
4. What theme of the poem is highlighted in this extract?
5. Name the poem and the poet.

Q7. Answer the following questions in 30–40 words (any four):

**(12 Marks)**

1. How does the chapter "*Discovering Tut*" highlight advancements in technology?
2. Why did the narrator feel awkward while entering *The Address*?
3. What did Mrs. Fitzgerald say about taking control of one's family in *Mother's Day*?
4. Explain why the poet in *Father to Son* feels disconnected from his child.
5. What do you think made Rajendra realize that facts can be stranger than fantasies?

**ST. PBN PUBLIC SCHOOL, GURUGRAM**  
**CLASS XI**  
**SAMPLE PAPER (UT-2)**  
**SUBJECT – PHYSICS**

**TIME: 3 HRS.**

**M.M.: 50**

**General Instructions:**

- 1. The question paper contains three sections**
- 2. Section A has 11 questions. Attempt any 10 questions. Each question carries 1 mark each.**
- 3. Section B has 8 questions each carries 2 marks. Attempt all the questions.**
- 4. Section C has 8 questions. Each carries 3 marks. Attempt all the questions.**
- 5. There is no negative marking.**

**SECTION-A**

1. The absolute zero is that temperature at which
  - (a) all molecular linear velocities are zero.
  - (b) most of the molecular linear velocities are zero.
  - (c) most of the molecular linear velocities are not zero.
  - (d) the weight of the gas is zero.
2. The freezer in a refrigerator is located in the top section so that:
  - (a) motor is not heated.
  - (b) heat gained from the environment is more.
  - (c) heat gained from the environment is less.
  - (d) the entire chamber of the refrigerator is cooled quickly.
3. In old age, arteries carrying blood in the human body, become narrow resulting in an increase in the blood pressure. This follows from
  - a. Pascal's law
  - b. Stoke's law
  - c. Archimedes principle
  - d. Bernoulli's principle
4. The running of fan makes us comfortable during summer because it:
  - (a) increases the conductivity of the air
  - (b) reduces the thermal radiation
  - (c) cools the air
  - (d) enhances the rate of evaporation of perspiration

5. Hydraulic brakes work on the basis of:

- (a) Poiseuille's law.
- (b) Pascal's law.
- (c) Archimede's principle.
- (d) Bernoulli's principle.

6. A brass spring has a spring constant  $k$ . When the spring is heated, the spring constant will

- a. remain the same
- b. increase
- c. increase, then decrease
- d. decrease

7. In an insulated vessel, 250 g of ice at  $0\text{ }^{\circ}\text{C}$  is added to 600 g of water at  $18.0\text{ }^{\circ}\text{C}$ . What is the final temperature of the system? 1

- a.  $-2\text{ }^{\circ}\text{C}$
- b.  $0\text{ }^{\circ}\text{C}$
- c.  $4\text{ }^{\circ}\text{C}$
- d.  $2\text{ }^{\circ}\text{C}$

Directions:

- (a) If both assertion and reason are true and the reason is the correct explanation of the assertion.
- (b) If both assertion and reason are true but reason is not the correct explanation of the assertion.
- (c) If assertion is true but reason is false.
- (d) If the assertion and reason both are false.

8. Assertion : Steel is more elastic than rubber.

Reason : Under given deforming force, steel is deformed less than rubber.

9. Assertion : Glassy solids have sharp melting point.

Reason : The bonds between the atoms of glassy solids get broken at the same temperature.

10. Assertion : The heat supplied to a system is always equal to the increase in its internal energy.

Reason : When a system changes from one thermal equilibrium to another, some heat is absorbed by it.

## SECTION - B

1. Draw a diagram showing the construction of a hydraulic brake. Show how does it work?
2. Stoke's law deals with spherical bodies moving through a viscous fluid. Give its statement and derive it dimensionally.
3. Oil spreads over the surface of the water. Why?

OR

What are the factors on which angle of contact depends?

4. Explain why a body with large reflectivity is a poor emitter?
5. What is the temperature of the triple-point of water on an absolute scale whose unit interval size is equal to that of the Fahrenheit scale?
6. Can you design heat energy of 100% efficiency?

OR

A wire of length  $L$ , area of cross-section  $A$  and young's modulus  $Y$  is stretched by an amount  $x$ . What is the work done?

7. Why is the energy of thermal radiation less than that of visible light?
8. The wavelength of maximum solar emission is observed to be approximately  $0.475\mu\text{m}$ . What is the surface temperature of the sun (assumed as blackbody)?

## SECTION - C

1. Derive the expression for terminal velocity.
2. A mass of 5 kg is hung from a copper wire of 1 mm diameter and 2 m in length. Calculate the extension produced. What should be the minimum diameter of the wire so that its elastic limit is not exceeded? Elastic limit for copper =  $1.5 \times 10^9$  dyne  $\text{cm}^{-2}$ ,  $Y$  for copper =  $1.1 \times 10^{12}$  dyne  $\text{cm}^{-2}$ .

OR

A steel rod of length  $2l$ , cross sectional area  $A$  and mass  $M$  is set rotating in a horizontal plane about an axis passing through the centre. If  $Y$  is the Young's modulus for steel, find the extension in the length of the rod. (Assume the rod is uniform.)

3. What do you mean by gravitational potential at a point? Give its unit and dimensional formula. Obtain an expression for gravitational potential at a distance  $r$  from the centre of Earth of mass  $M$  and radius  $R$ , where  $r \geq R$ .
4. A body cools from  $80^\circ\text{C}$  to  $50^\circ\text{C}$  in 5 minutes. Calculate the time it takes to cool from  $60^\circ\text{C}$  to  $30^\circ\text{C}$ . The temperature of the surroundings is  $20^\circ\text{C}$ .

5. A gas in a closed container is heated, causing the lid of the container to rise. The gas performs 3J of work to raise the lid, such that it has a final total energy of 15J. How much heat energy was added to the system?

6. Write the working of refrigerator.

7. What is the ratio of final volume to initial volume if the gas is compressed adiabatically till its temperature is doubled?

8. CASE STUDY :

We know that the earth attracts every object with a certain force and this force depends on the mass ( $m$ ) of the object and the acceleration due to the gravity ( $g$ ). The weight of an object is the force with which it is attracted towards the earth. Mathematically

Where,  $W$  = weight of object

$m$  = mass of object

$g$  = acceleration due to the gravitational force

As the weight of an object is the force with which it is attracted towards the earth, the SI unit of weight is the same as that of force, that is, Newton (N). The weight is a force acting vertically downwards; it has both magnitude and direction. We have learnt that the value of  $g$  is constant at a given place. Therefore at a given place, the weight of an object is directly proportional to the mass, say  $m$ , of the object, that is,  $W \propto m$ . It is due to this reason that at a given place, we can use the weight of an object as a measure of its mass. Answer the following questions.

1) Dimensions of acceleration due to the gravity ( $g$ ) is

a)  $[ML^1 T^{-2}]$

b)  $[ML^{-1} T^{-2}]$

c)  $[ML^1 T^{-3}]$

d) None of these

2) S.I unit of weight is same as

a) Force

b) Mass

c) Acceleration due to gravity

d) None of these

3) Whether weight is scalar quantity or vector quantity? Justify your answer.

4) Differentiate between mass and weight.



**ST PBN PUBLIC SCHOOL**  
**UNIT TEST-II EXAMINATION**  
**CLASS XI**  
**CHEMISTRY (043) SAMPLE PAPER**

MM: 50

Time : 2 hours

**GENERAL INSTRUCTIONS:**

Read the following instructions carefully.

1. There are 27 questions in this question paper .
2. SECTION A - Q. No. 1 to 16 are multiple choice questions carrying 1 mark each.
3. SECTION B - Q. No. 17 to 20 are very short answer questions carrying 2 marks each.
4. SECTION C - Q. No.21 to 24 are short answer questions carrying 3 marks each.
5. SECTION D- Q. No. 25 is case based questions carrying 4 marks each.
6. SECTION E- Q. No. 26 and 27 are long answer questions carrying 5 marks each.
6. All questions are compulsory.

**SECTION-A**

Q.1 Which of the following molecules have trigonal planar geometry?

- a)  $\text{BF}_3$                       b)  $\text{NH}_3$                       c)  $\text{PCl}_3$                       d)  $\text{IF}_3$

Q.2 The bond length between hybridized carbon atom and other carbon atom is minimum in

- a) Propane    b) Butane  
c) Propene    d) Propyne

Q.3 Which type of chemical bond involves the transfer of electrons from one atom to another?

- a) Covalent    b) Ionic  
c) Metallic    d) Hydrogen

**Q.4 Which one of them is the weakest?**

**a) Ionic bond**

**b) Covalent bond**

**c) Metallic Bond**

**d) van der Waals force**

**Q.5 What's the bond order of Hydrogen ( $H_2$ ) ?**

**a) 3**

**b) 2**

**c) 1**

**d) 0**

**Q.6 The IUPAC name of  $CH_3CHO$  is:**

**a) Acetaldehyde**

**b) Methylaldehyde**

**c) Formyl chloride**

**d) Ethanal**

**Q.7 Which of the following cannot be represented by resonance structures?**

**a) Dimethyl ether**

**b) Nitrate anion**

**c) Carboxylate anion**

**d) Toluene**

**Q8 .Which one is the strongest acid among the following options?**

**a)  $CH_2FCOOH$**

**b)  $CH_2ClCOOH$**

**c)  $CHCl_2COOH$**

**d)  $CHF_2COOH$**

**Q.9. Homolytic fission leads to the formation of**

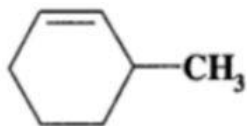
**a) nucleophile**

**b) carboanion**

**c) free radical**

**d) carbocation**

**Q.10 The IUPAC name of**



- a) 3-Methyl cyclohexene  
b) 1-methyl cyclohex-2-ene.  
c) 6-methyl cyclohexene  
d) 1-methyl cyclohex-5-ene

**Q.11** Bond length of (I) ethane, (II) ethene, (III) acetylene and (IV) benzene follows the order:

- a) I > II > III > IV  
b) I > II > IV > III  
c) I > IV > II > III  
d) III > IV > II > I

**Q.12** Which one of the following is not an isomer of 3-Methylbut-1-yne?

- a) Pent-1-yne  
b) Buta-1,3-diene  
c) Pent-2-yne  
d) Penta-1,3-diene

**Q.13** Benzene reacts with  $\text{CH}_3\text{Cl}$  in the presence of anhydrous  $\text{AlCl}_3$  to form

- a) Chlorobenzene  
b) Benzyl chloride  
c) xylene  
d) toluene

**Q.14** Which of the following is not a process of halogenation of alkanes?

- a) acylation  
b) chlorination  
c) bromination  
d) iodination

**Q.15** Assertion : Acetylene is acidic in nature.

Reason : Acetylene is  $\text{sp}$  hybridised.

**Directions:** (a) Assertion and reason both are correct statements and reason is correct explanation for assertion.

(b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.

(c) Assertion is correct statement but reason is wrong statement.

**(d) Assertion is wrong statement but reason is correct statement.**

**Q.16 Assertion: Carbon shows the property of catenation.**

**Reason: Carbon atom possesses a unique property to link**

**Directions: (a) Assertion and reason both are correct statements and reason is correct explanation for assertion.**

**(b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.**

**(c) Assertion is correct statement but reason is wrong statement.**

**(d) Assertion is wrong statement but reason is correct statement.**

### **SECTION-B**

**Q.17 What is the hybridisation of each carbon in  $\text{H}_2\text{C} = \text{C} = \text{CH}_2$ ?**

**Q.18 Write chemical equations for the combustion reaction of the following hydrocarbons:**

**(i) Butane, (ii) Pentene,**

**Q.19 Use molecular orbital theory to explain why the  $\text{Be}_2$  molecule does not exist.**

**Q.20 Write structural formulae for compounds named as-**

**(a) 1-Bromoheptane**

**(b) 5-Bromoheptanoic acid**

### **SECTION-C**

**Q21. Arrange benzene, *n*-hexane and ethyne in increasing order of their acidic behaviour. Also, give a reason for this behavior.**

**Q22. Why does benzene undergo electrophilic substitution reactions easily and nucleophilic substitutions with difficulty?**

**Q23.** Although geometries of  $\text{NH}_3$  and  $\text{H}_2\text{O}$  molecules are distorted tetrahedral, the bond angle in water is less than that of ammonia. Discuss

**Q24.** Distinguish between a sigma and a pi bond.

### **SECTION-D**

**Q.25** Lewis dot structures, in general, do not represent the actual shapes of the molecules. In case of polyatomic ions, the net charge is possessed by the ion as a whole and not by a particular atom. It is, however, feasible to assign a formal charge on each atom. The formal charge of an atom in a polyatomic molecule or ion may be defined as the difference between the number of valence electrons of that atom in an isolated or free state and the number of electrons assigned to that atom in the Lewis structure. It is expressed as  
:Generally the lowest energy structure is the one with the smallest formal charges on the atoms. The formal charge is a factor based on a pure covalent view of bonding in which electron pairs are shared equally by neighbouring atoms. The octet rule, though useful, is not universal. It is quite useful for understanding the structures of most of the organic compounds and it applies mainly to the second period elements of the periodic table. There are three types of exceptions to the octet rule.

- The incomplete octet of the central atom
- Odd-electron molecules
- The expanded octet from the Kössel and Lewis treatment of the formation of an ionic bond, it follows that the formation of ionic compounds would primarily depend upon:
  - The ease of formation of the positive and negative ions from the respective neutral atoms;
  - The arrangement of the positive and negative ions in the solid, that is, the lattice of the crystalline compound.

(a) Write Lewis dot symbols for atoms of the following elements :

a) Mg

b) Na

(b) Write the favourable factors for the formation of an ionic bond.

(c) Discuss the shape of the following molecules using the VSEPR model:

$\text{BeCl}_2$ ,  $\text{BCl}_3$

(d) How do you express the bond strength in terms of bond order?

### **SECTION-D**

**Q.26** How would you convert the following compounds into benzene? (1+2+2)

(i) Ethyne (ii) Ethene (iii) Hexane

**Q.27** Although both  $\text{CO}_2$  and  $\text{H}_2\text{O}$  are triatomic molecules, the shape of  $\text{H}_2\text{O}$  molecule is bent while that of  $\text{CO}_2$  is linear. Explain this on the basis of dipole moment.

**ST. PBN PUBLIC SCHOOL**  
**UNIT TEST-II : SAMPLE PAPER**  
**CLASS-XI**  
**BIOLOGY**

**TIME: 2 Hours.**

**MM: 50**

**General instructions**

- All questions are compulsory.
- Section A have 14 questions carrying 1 mark each.
- Section B has 6 questions carrying 2 marks.
- Section C there are 5 questions, each carrying 3 marks.
- Section D is case study based question carrying 4 marks.
- Section E has 1 question carrying 5 mark.

**SECTION A**

1. Photorespiration in C<sub>3</sub> plants starts from:  
(a) Phosphoglycerate    (b) Phosphoglycolate    (c) Glycerate    (d) Glycine
2. The most important energy carrier of the cell is:  
(a) NAD    (b) FAD    (c) GTP    (d) ATP
3. Maize grain is  
(a) Seed    (b) Embryo    (c) Ovule    (d) Fruit
4. Medullary rays possess  
(a) Tracheids    (b) sclerenchymatous fibres  
(c) parenchymatous cells    (d) all of these
5. Length of the petiole increases due to division of  
(a) Apical meristem    (b) intercalary meristem  
(c) lateral meristem    (d) all of these
6. In frog heart, there are cardiac muscles which consist of fibres called  
(a) Purkinje fibres    (b) myonemes  
(c) telodendria    (d) columnae carnae
7. In frog, reduced third eye is represented by  
(a) Tympanum    (b) brown spot  
(c) region below the eyes    (d) region around snout
8. Epiblema of roots is equivalent to  
(a) Pericycle    (b) Endodermis  
(c) Epidermis    (d) Stele

9. Monocot stem lacks  
 (a) Tracheids (b) sieve tube  
 (c) cambium (d) none of these.
10. Which of the following is nucleated  
 (a) Vessel (b) Sieve cells (c) Tracheids (d) Companion cells
11. Which of the following molecules in the 'entrant molecule' in kreb's cycle?  
 (a) Glucose (b) Pyruvate (c) Acetyl CoA (d) Ethanol
12. In the leaves of  $C_4$  plants, malic acid formation during  $CO_2$  fixation occurs in the cells of  
 (a) Bundle Sheath (b) phloem (c) Epidermis (d) Mesophyll

Directions: In the following questions, a statement of assertion is followed by a statement of reason.

Mark the correct choice as:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.  
 (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.  
 (c) If Assertion is true but Reason is false.  
 (d) If both Assertion and Reason are false.

13. ASSERTION : Dark reaction occurs at night in the stroma of chloroplast.  
 REASON: All the enzymes responsible for  $CO_2$  fixation remain inactive in presence of light.
14. ASSERTION: The innermost distinct layers of the cortex is called endodermis.  
 REASON : The cells of endodermis are non living and bear casparian strips.

### **SECTION B**

15. What are false fruits? Give two examples.  
 16. What is the significance of brown spot in the median line between the eyes of the frog?  
 17. What is fermentation?  
 18. What is the most important function of PSII?  
 19. Name a plant organ where endodermis is absent. Give one basic difference endodermis and epidermis.  
 20. How can you differentiate between free central and axile placentation?

### **SECTION C**

21. Differentiate between leaflets of compound leaf from simple leaves of a branch?  
 22. How is photosynthesis and respiration related to each other?  
 23. Write the significance of citric acid cycle.



24. Give a note on organs of excretion in a frog.

25. Distinguish between the following:

- (a) Exarch and Endarch
- (b) Stele and vascular bundles.

### **Section-D**

26. Case study-based question

The epidermal tissue system forms the outer-most covering of the whole plant body and comprises epidermal cells, stomata and the epidermal appendages – the trichomes and hairs. The epidermis is the outermost layer of the primary plant body. It is made up of elongated, compactly arranged cells, which form a continuous layer. Epidermis is usually single layered. Epidermal cells are parenchymatous with a small amount of cytoplasm lining the cell wall and a large vacuole. The outside of the epidermis is often covered with a waxy thick layer called the cuticle which prevents the loss of water. Cuticle is absent in roots. Stomata are structures present in the epidermis of leaves. Stomata regulate the process of transpiration and gaseous exchange. Each stoma is composed of two bean shaped cells known as guard cells which enclose stomatal pore. In grasses, the guard cells are dumb-bell shaped. The outer walls of guard cells are thin and the inner walls are highly thickened. The guard cells possess chloroplasts and regulate the opening and closing of stomata. Sometimes, a few epidermal cells, in the vicinity of the guard cells become specialised in their shape and size and are known as subsidiary cells. The stomatal aperture, guard cells and the surrounding subsidiary cells are together called stomatal apparatus. The cells of epidermis bear a number of hairs. The root hairs are unicellular elongations of the epidermal cells and help absorb water and minerals from the soil. On the stem the epidermal hairs are called trichomes. The trichomes in the shoot system are usually multicellular. They may be branched or unbranched and soft or stiff. They may even be secretory. The trichomes help in preventing water loss due to transpiration.

1. Cell which regulate the opening and closing of the guard cells.
2. Components of the epidermal appendages.
3. Define cuticle and its function.
4. What are trichomes?

### **Section-E**

27. Draw a well labelled diagram of reproductive system of frog.

28. show the flow chart of citric acid cycle.

**ST. PBN PUBLIC SCHOOL**  
**UNIT TEST-II : SAMPLE PAPER**  
**CLASS-XI**  
**COMPUTER SCIENCE**

**Time: 2 Hours**

**M.M:50**

**General Instructions:**

- *Attempt all the questions.*
- *Read the questions carefully and answer properly.*
- *Write question number before writing the answers.*

**SECTION- A**

**Choose the correct option and write in the answer sheet**

**(1 x 12 = 12)**

1. The sequential accessing of each of the elements in a list is called \_\_\_\_\_.  
(a) List indexing (b) List Traversal  
(c) List Slicing (d) List Accessing
2. Which of the following is considered as a tuple in python?  
(a) ('r' ,) (b) ('r')  
(c) ['r',] (d) {'r',}
3. A function that can be used to generate even random numbers between a particular range is :  
(a) randrange() (b) random()  
(c) randint() (d) none of these
4. Which of the following will give the output as : [23,2,9,75] of given list1=[1,23,6,2,14,9,81,75]  
(a) print(list1[1:7:2]) (b) print(list1[0:7:2])  
(c) print(list1[1:8:2]) (d) print(list1[0:8:2])
5. What will be the output of the following python code?  
>>> d= {"john": 40, "peter":45}  
>>> "john" in d  
(a) True (b) False  
(c) 1 (d) Error
6. To indicate position of an element from the end of list \_\_\_\_\_ is used.  
(a) len( ) (b) pop( )  
(c) negative indexing (d) slicing
7. Which of the following module in python provides mathematical functions?  
(a) random (b) math  
(c) statistics (d) csv
8. Consider, C1=("TEA POT", [1,2,'3'],'S',(3,4,6),"book",10)  
What will be the output of: **C1[1][2]\*3**  
(a) 444 (b) '333'  
(c) 'SSS' (d) 'book'
9. What will be the output of the following print() statement in Python?

```
>>> import statistics
>>> statistics.mode([21,24,21,45,56,67,21])
```

- (a) 24 (b) 21  
(c) 56 (d) 45

10. What is the value of x, if  $x = \text{math.factorial}(0)$ ?

- (a) 1 (b) 0  
(c) Error (d) None of these

11. Consider a declaration  $L = 91, 'Python', 44$

Name the data type of L?

- (a) List (b) Dictionary  
(c) Tuple (d) sets

12. Which command would you use to import only the randint function from the random module?

- (a) import random randint (b) import randint from random  
(c) from random import randint (d) from random import \*

**Q13 and 14 are ASSERTION AND REASONING based questions. Mark the correct choice as**

- a) Both A and R are true and R is the correct explanation for A  
b) Both A and R are true and R is not the correct explanation for A  
c) A is True but R is False  
d) A is false but R is True

13. **Assertion (A):** Keys of the dictionaries must be unique.

**Reason (R):** The keys of dictionary can be accessed using values.

14. **Assertion (A):** In Python, list is an immutable collection of data.

**Reason (R):** Mutable means that any change or alteration in data is mentioned in the same place. The updated collection will use the same address for its storage.

### SECTION B

(2x 4 = 8)

15. (i) What will be the output of following Python code?

```
list1 = [12, 32, 65, 26, 80, 10]
list1.sort()
print(list 1)

list1 = [12, 32, 65, 26, 80, 10]
list1.sorted()
print(list 1)
```

(ii) What will be the output of following Python code?

```
list1 = [2,4,6,8,10]
list2 = list1
list3 = list1.copy()
list1[4] = 12
list2[3] = 14
list1.remove(2)
print("List1 ",list1)
print("List2 ",list2)
print("List3 ",list3)
```

16. (i) TypeError occurs while statement 2 is running. Give reason. How can it be corrected? (1+1)

```
>>> tuple22 = (5)
>>> len(tuple22)
```

(ii) Find the errors and rewrite the correct statements.

- a) L1= (101)
- b) L2 = [Anny,Deny,Tiny]

17. Write Python expression for each of these mathematical expressions with respect to python modules:  
(1+1)

(i) 
$$\frac{\sqrt{a^3+b^3+c^3}}{\sqrt{a^2+b^2}}$$

(ii) 
$$\frac{x^4+y^5+z^6}{\sqrt{x^2 \times y^3 \times z^4}}$$

18. Write a Python program to print odd numbers of a list input by user. (1+1)

**OR**

Write a Python program to calculate mean of a given tuple of numbers. (2)

### SECTION C

**(3x 4 = 12)**

19. (i) What do you mean by tuple concatenation?

(ii) Differentiate between append( ) and extend( ) functions of list. (1+2)

20. Write a Python program to input any two tuples and swap their values. (3)

**OR**

Write a program to find the largest and second largest elements in a given list of elements.

21. (i) Lists and Tuples are ordered. Justify. (1+1)

(ii) Write a program in Python to implement the Linear Search technique using list in Python.

22. Write a program in Python to enter names of doctors and their respective department as input and store them in a dictionary. (3)

### SECTION D

23. What do you mean by sorting? Explain Bubble Sort technique implemented using list with an example. Write Python code also. (4)

24. (i) The record of a student (Name, Roll No., Marks in five subjects and percentage of marks) is stored in the following list: (4)

```
stRecord = ['Radha', 'A-36', [56, 98, 99, 72, 69], 78.8]
```

Write Python Statement to retrieve the following information from the list stRecord.

- Percentage of a student
- Marks of fourth subject
- Change the name of student from 'Radha' to 'Raman'.

- (ii) What is the difference between the outputs of the code#1 and code#2? Give reasons.

```
Code#1
t1 = (1, 2, 3)
t2 = (4, 5, 6)
t3 = t1 + t2
print("New tuple is:", t3)

Code#2
t1 = (1, 2, 3),
t2 = (4, 5, 6),
t3 = t1 + t2
print("New tuple is:", t3)
```

OR

(Option for ii part only)

Write a Python code to generate a random number between 1 to 20.

(2+2)

### SECTION E

25. Consider the following tuple 't1' and answer the following questions: (4)

```
t1 = (100, 200, "Global", 3, 3.5, "Exam", [1, 2], (30, 40), (3, 5, 3))
```

- |                    |                  |
|--------------------|------------------|
| (i) len( t1)       | (v) t1[5:]       |
| (ii) 20 not in t1  | (vi) t1.count(3) |
| (iii) t1[-8:-4]    | (vii) t1[2] * 2  |
| (iv) t1.index(3,6) | (viii) any(t1)   |

26. Amar Basket is a department store with a wide range of merchandise including groceries, fruits, vegetables and household accessories. It aims to develop a complete software for Billing, Inventory and Accounts management and to provide consumers a user-friendly interface to view item codes and prices of various items.

Write a program in python that repeatedly asks the user to enter product names and prices. Store all of them in a dictionary whose keys are product names and values are prices. Also write a code to search an item from the dictionary. (4)

**ST. PBN PUBLIC SCHOOL**  
**UNIT TEST-II : SAMPLE PAPER**  
**CLASS-XI**  
**PHYSICAL EDUCATION**

**TIME: 2 Hours**

**MM: 50**

**GENERAL INSTRUCTION :-**

1. All question are compulsory.
2. Question 1 to 12 carry 1mark.
3. Question 13 to 16 carry 2 mark.
4. Question 17 to 21 carry 3 mark.
5. Question 22 to 24 carry 5 mark.

1. Which one of the following physical fitness test items is used for children of age group 5 to 8 years and 9 to 18 years?  
(a) Plate Tapping Tests  
(b) Body Mass Index  
(c) Flexibility Test  
(d) Cardiovascular Endurance Test
2. In which test the length of various bones are measured and tested?  
(a) Achievement tests  
(b) Cardiovascular test  
(c) Anthropometric test  
(d) Motor ability test
3. Demonstration of the test item is included in the following :  
(a) During Testing  
(b) In advance preparation  
(c) After Testing  
(d) All of these
4. What is the study of human movements called?  
(a) Anatomy  
(b) Kinesiology  
(c) Biomechanics  
(d) Physiology
5. How many bones are there in our lower limbs?  
(a) 60  
(b) 62  
(c) 64  
(d) None of these
6. If the height of the child is in feet , it is classified under :  
(a) Evaluation  
(b) Measurement  
(c ) Test  
(d) None of these
7. There are two statements which are stated below and labelled Assertion(A) and Reason(R)  
**Assertion(A):** The Body Mass Index is also known as Quetelet Index because it was invented by Adolphe Quetelet.  
**Reason(R):** With the help of BMI, it is to know whether one is underweight, normal weight, overweight or it the category of obesity.

In the context of above two statements, which one of the following is correct?

- 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.

8. A place where two bones join is called :

- (a) Joint
- (b) Corner
- (c) Blood
- (d) All of the above

9. The lungs oxygenate the :

- (a) Air
- (b) Water
- (c) Blood
- (d) Acid

10. Biomechanics does not help in improvement of players in terms of :

- (a) playing technique
- (b) learning process
- (c) punctuality
- (d) performance

11. Opposite movement for abduction is :

- (a) Circumduction
- (b) Supination
- (c) Pronation
- (d) Adduction

12. An example of Hinge joint is :

- (a) Ankle
- (b) Wrist
- (c) Elbow
- (d) Shoulder

13. What is meant by measurement?

14. Which is the longest and the smallest bone in human body?

15. What do you mean by anatomy?

16. Write any two types of movements.

17. **Case based question I:**

When we sit up or stand, the body tends to maintain the posture. This is the equilibrium and is multifactorial in origin. The body needs to maintain equilibrium not only at rest but also during movement. There are seven fundamental movements in the human body. These work in tandem to maintain balance and equilibrium at rest and while in motion. Losing this capability is incapacitating. The stability of the human body follows the principles of physics and these determine the degree of stability. Thus, a young child is less stable than an adult, so an adult can run faster and stand for long while maintaining equilibrium. Use of this equilibrium and related concept of centre of gravity finds great importance in sports.

(a) How do you define equilibrium? What are the different types of equilibrium? What are the seven fundamental movements?

- (b) What are the guiding principles determining degree of stability?
- (c) How is the concept of equilibrium and centre of gravity used in sports?
18. Explain any three functions of Skeletal System.
  19. Discuss any two guidelines for advance preparation.
  20. What do you understand by Ball and Socket joint?
  21. Explain any three principles of biomechanics.
  22. Explain the applications of axes and planes in body movement
  23. Explain any five importances of Anatomy and Physiology.
  24. Explain any five importances of Test, Measurement, and Evaluation in Sports.