



परमाणु ऊर्जा शिक्षण संस्था
Atomic Energy Education Society
वार्षिक परीक्षा/ Annual Examination 2025-26

कक्षा / Class: IX

अवधि / Duration: 3 hours

विषय / Subject: SCIENCE

अधिकतम अंक / Maximum Marks : 80

सामान्य निर्देश / General Instructions:

- (i) This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.
- (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.

Q. No.	Section – A (BIOLOGY) (28 Marks)	Marks
1.	Choose the difference between prokaryotes and eukaryotes? A.Prokaryotes have many chromosomes, eukaryotes have single chromosome B.Prokaryotes have a nucleoid, Eukaryotes have a nucleus. C.Prokaryotes have DNA, Eukaryotes have RNA. D.Prokaryotes have a nucleus. Eukaryotes have a nucleoid.	1
2.	The walls of cork cells are thickened by the deposition of an organic substance which makes these cells impermeable to water and gases. This substance is A.Pectin B.Cellulose C. Suberin D. Lignin	1
3.	Which of the following does not have DNA? A.Nucleus B.Mitochondria C. Ribosomes D.Chloroplast	1
4.	 smoothens the bone surface at the joints A. Ligament B. Cartilage C. Tendon D. Adipose tissue	1
5.	A cell has 10 chromosomes. After mitotic cell division, the number of chromosomes in the daughter cell will be: A.4 B.5 C.10 D.20	1
6.	Engulfing of food materials or foreign bodies by cells like Amoeba is called: A. Endocytosis B. Plasmolysis C. Diffusion D. Osmosis	1
7.	Which of the following helps in repair of tissue and fills up the space inside the organ? A. Tendon B. Cartilage C. Adipose tissue D. Areolar tissue	1

The following two questions consist of two statements – Assertion (A) and Reason (R). Answer these questions by 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.

8. Assertion (A): Grains to be stored should have low moisture level. 1
Reason (R): Low moisture level in grains inhibits the growth of bacteria and fungi.

9. Assertion (A): Golgi bodies are known as the suicidal bag of the cell 1
Reason (R): Golgi bodies help in storage modification and packaging of materials in the cell.

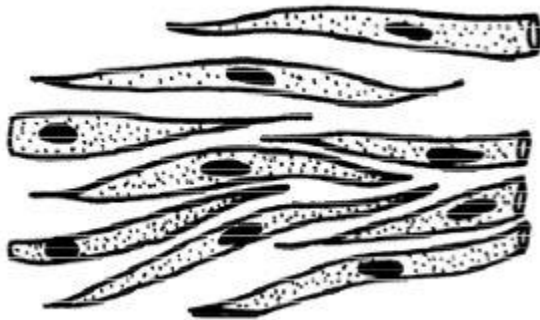
10. If cells of onion peel and RBC are separately kept in a hypotonic solution, what will happen to each of them? Explain. 2

11. **Attempt either option A or B.** 2
A. A dairy farmer wants to maintain a good and clean shelter for his dairy animals. How can he do this so that his animals stay healthy and produce clean milk?(any 2 ways)

OR

B. Differentiate between layers and broilers

12. Observe the following diagram and answer the following questions: 3

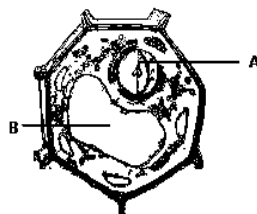


- i) Identify the type of tissue mentioned in the given figure.
- ii) Write any two identifying characteristics of the type of tissue mentioned in the given figure.
- iii) Where is the given tissue found in our body?(any two part)

13. Answer the following questions: 3
i) Soybean and maize can grow simultaneously on the same field. Explain why?
ii) What is the main purpose of mixed cropping?
iii) Enlist various methods to control weed, insect, and disease. (any two)

14. Observe the diagram and answer the following questions:

2+1+1



Attempt either sub part A or B.

A. Identify the cell organelle **A**. Explain its structure.

OR

B. Identify the cell organelle **B**. List any two functions carried out by this structure in the cell.

C. Grass looks green, ripened papaya appears yellow. Which cell organelle is responsible for this?

D. Which structure is called 'Powerhouse of the cells'? Explain why.

15. **Attempt either option A or B.**

5

A. The meristematic cells are restricted to certain specific regions which continuously add new cells to the plant body. Depending upon the occurrence and position in the plant body, meristems are of 3 types, namely apical meristem lateral meristem and intercalary meristem.

i) Where is the apical meristem located? What are its functions?

ii) Where would you find the intercalary meristem?

iii) Write the function of lateral meristem

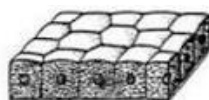
iv) List out the characteristics of cells of meristematic tissue

OR

B. The animal body is covered by epithelial tissue. The epithelial tissue covers most of the organ and cavity within the body. It also forms a barrier to keep different body systems separate. The skin, the lining of the mouth, lining of the blood vessels, lung alveoli and kidney tubules are all made of epithelial tissue. The oesophagus and lining of the mouth are covered with squamous epithelium. Skin helps in protecting the body.

i) What type of epithelial tissues are present in areas where absorption and secretion occur?

ii) Identify the type of epithelial tissue shown in the following figure.



iii) What is the role of cilia in the epithelial tissue of respiratory tract?

iv) Draw a neat diagram of squamous epithelial tissue.

v) Under certain circumstances squamous epithelium is known as stratified squamous epithelium. Justify.

Section – B (CHEMISTRY) (25 Marks)

- 16.** Water kept in an earthen pot becomes cool in summer, because: **1**
- i) Molecules of water escape through pores and cause cooling.
ii) Earthen pots are made up of clay.
iii) It decreases the temperature of the water.
iv) In summer, the rate of evaporation of water is faster.
- A. (i) and (ii) are correct. B.(i), (ii) and (iii) are correct
C.(ii) and (iii) are correct D.(i), (ii) ,(iii)&(iv) are correct
- 17.** The melting points of two solids [A] and [B] are 300 K and 350 K respectively. **1**
Which has stronger inter-particle force of attraction?
A. Solid [A] B. Solid [B]
C. Both have the same inter-particle force of attraction.
D. Both have greater inter-particle force of attraction.
- 18.** Isotope of which element is used in the treatment of cancer? **1**
A. Copper B. Iodine C. Cobalt D. Carbon
- 19.** A liquid is able to scatter a beam of light but it leaves no residue after passing **1**
through a filter paper. A liquid can be
A. True solution B. Suspension C. Colloidal solution D. Concentrated solution
- 20.** The chemical formula of a metal sulphate is M_2SO_4 .What will be the formula of its **1**
chloride?
A. MCl_2 B. MCl C. M_2Cl D. M_2Cl_4
- 21.** Electron was discovered by **1**
A. Rutherford B. Goldstein C. J.J Thomson D. J.Chadwick
- 22.** Which of the following element will not shows variable valency? **1**
A. Copper B. Iron C. Hydrogen D. Phosphorous

The following question consist of two statements – Assertion (A) and Reason (R). Answer the question by selecting the appropriate option given below:

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- 23.** Assertion (A): The intermolecular forces in solid state are stronger than those in the **1**
liquid state.
Reason (R): The space between the particles of matter is called intermolecular space.
- 24.** a) If you open a bottle of perfume in one corner of a room, it immediately spreads **2**
throughout the room. Identify the property involved.
b) Explain Sublimation.

25. Attempt either option A or B. 3

A. Describe the postulates of Dalton's atomic theory (Six).

OR

B. Write the Chemical formula of Calcium Sulphate. Identify the Cation and Anion species of Calcium Sulphate. Calculate formula unit mass of Calcium Sulphate (Atomic mass of Ca=40u, S=32u, and O=16u)

26. Explain laws of chemical combinations (Law of conservation of mass and Law of definite proportions) with suitable examples 3

27. Matters are classified into pure substances and mixtures. Mixtures are constituted by more than one kind of pure form of matter. Homogeneous mixtures are regarded as solutions or true solutions. Heterogeneous mixtures are of two types. These are suspensions and colloidal solutions. 4

Attempt either subpart A or B.

A. Differentiate between true solution & Suspension

OR

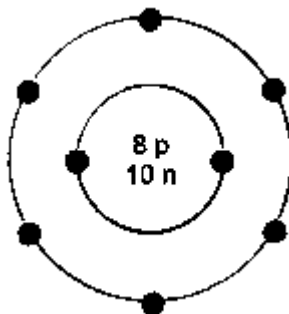
B. Differentiate between true solution & Colloidal (2)

C. Whether a solution is always liquid or not. Comment. (1)

D. List any two examples of chemical change. (1)

28. Attempt either option A or B. 5

A. The given figure depicts the atomic structure of an atom of an element 'X'.



Write the following information about the element 'X'.

- Atomic number of 'X'
- Atomic mass of 'X'
- Valence electrons present in X
- Valency of 'X'
- 'X' should be metal or non-metal?

OR

B.

- Differentiate between isotopes and isobars with examples (2)
- What is atomicity. What is the atomicity of ozone (1+1)
- Write the electronic distribution of magnesium (Atomic number of Mg=12u) (1)

Section – C (PHYSICS) (27 Marks)

29. The inertia of an object causes the object to 1
 A. Decrease its speed B. Increase its speed
 C. Resist any change in the state of its motion D. Decelerate due to friction

30. The distance which a compression or a rarefaction travels per unit of time gives: 1
 A. The density of sound wave
 B. Speed of sound
 C. Wavelength of sound
 D. Frequency of sound

The following question consists of two statements – Assertion (A) and Reason (R). Answer the question by selecting the appropriate option given below:

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 C. A is true but R is false.
 D. A is false but R is true.

31. **Assertion (A) :** Weight of a body on earth is equal to the force with which the body is attracted towards the earth. 1

Reason (R) : Weight of a body is independent of the mass of the body.

32. What are the uses of a distance-time graph? 2

33. Define Pressure and its S.I. unit 2

34. **Attempt either option A or B.** 2

A. The kinetic energy of an object of mass, m moving with a velocity of 5 m s^{-1} is 25 J. What will be its kinetic energy when its velocity is doubled?

OR

B. A man carrying a bag of mass 25 kg climbs up to a height of 10m in 50 seconds. Calculate the power delivered by him to the bag. [$g=9.8\text{m/s}^2$]

35. Write a short note on uniform circular motion. 3

36. A stone is released from the top of a tower of height 19.6 m. Calculate its final velocity just before touching the ground. [$g=9.8\text{m/s}^2$] 3

37. (i) Mention three characteristics of sound 3
 (ii) Why is the ceiling and wall behind the stage of good conference halls or concert halls made curved?
 (iii) What is the difference between longitudinal and transverse wave?

38. **Attempt either subpart B or C.** 1+2+1

A moving cricket ball has energy because it can knock down the stumps. Similarly, moving bullet, running water, and a flying airplane all have kinetic energy. The formula for kinetic energy is: $\text{KE} = (\frac{1}{2})mv^2$ where m is mass and v is velocity. The faster an object moves, the more kinetic energy it has.

- A. What is kinetic energy?
- B. A ball of mass 2 kg moves with a velocity of 3 m/s. Calculate its kinetic energy.

OR

- C. Find the momentum of a body of mass 100g having a kinetic energy of 20J.
- D. Why does a moving truck have more kinetic energy than a moving bicycle, even if both move at the same speed?

39. Attempt either option A or B.

5

- A.** State all 3 Newton's law of motion. Explain inertia and momentum.

OR

B.

- (i) What do you mean by recoil of gun? Why recoil velocity of gun is small.
- (ii) How much momentum will an object of mass 10 kg transfer to the floor, if it falls from a height of 5 m ($g = 10 \text{ m/s}^2$).
- (iii) Explain how a karate player can break a pile of tiles with a single blow of his hand.
