CARMEL CONVENT SCHOOL, CHANDIGARH
SECOND UNIT TEST (SESSION 2025-2026)
SCIENCE

CLASS: IX
DATE: 08-12-2025

TIME: 1HR 30 MIN
MM: 40

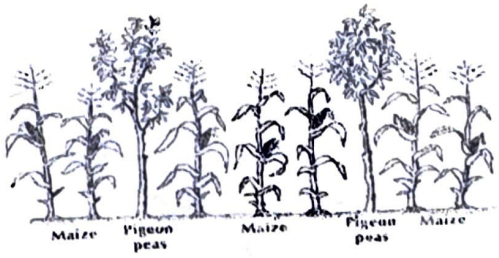
BIOLOGY(13)

MCQ'S:

1. Intercalated discs are present in
   a. Smooth muscular tissue
   b. Cardiac muscular tissue
   c. Areolar tissue
   d. Striated muscular tissue (1)

2. The characteristic feature of Connective tissue is
   a. Basement Membrane
   b. Matrix
   c. Myofibrils
   d. Collagen fibres (1)

3. The following image represents
   a. Crop Rotation
   b. Mixed Cropping
   c. Intercropping
   d. Mixed Farming (1)



Assertion and Reasoning

The question below consists of two statements, namely, Assertion (A) and Reason (R). For selecting the correct answer, use the following code:

a. Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).
c. Assertion (A) is true and Reason (R) is false.
d. Assertion (A) is false and Reason (R) is true.

4. Assertion(A): Cartilage covers the ends of bones.
   Reason (R): Cartilage acts as a shock absorber and reduces friction between bones. (1)

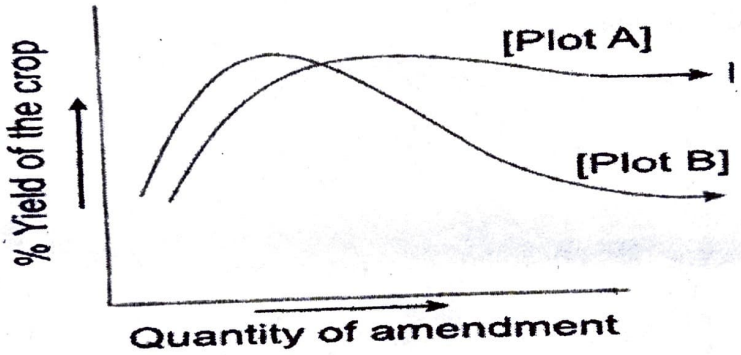
5. Assertion (A): Genetically modified organisms (GMOs) have the potential to improve crop yields and reduce the use of pesticides.
Reason(R): GMOs can be engineered to produce insect-resistant proteins, reducing the need for chemical pesticides. a) (1)

6. Name the following:
   a. Tissue lining the intestine columnar
   b. Tissue that absorbs fat from the intestine adipose. (2)

7. For which factor is variety improvement done in the following:
   a. Tallness and profuse branching are desirable agronomic characters for fodder crop
   b. One variety can be grown under different climatic conditions in different areas. (2)
      wider

CCT Based

The figure given below shows two crop fields (plot A and plot B) that have been treated by manures and chemical fertilizers, keeping other environmental factors the same. Answer the questions that follow:



8. Identify the type of nutrient given to Plot A and Plot B.
9. Why does plot B show sudden increase and then gradual decrease in yield?
   i. Chemical fertilizers provide a quick, immediate boost of nutrients for rapid plant growth.
   ii. Nutrients are depleted over time through plant absorption
   iii. Chemicals have beneficial effects on soil microbes, which increases soil fertility.
   iv. Increased application of fertilizers reduce soil quality
   a. i, ii, iii
   b. ii, iii
   c. ii, iii, iv
   d. i, ii, iv
10. Why is the highest peak in plot A graph slightly delayed?

11. Name any two nutrients which are supplied by green manure to the soil. (4)
humus,

CHEMISTRY (13)

1. Which option correctly represents the formula unit mass of Sodium Oxide: (1)
   a) 20u
   b) 39u
   c) 55u
   d) 62u

2. Which element is inert in nature:
   a) Element with 2 electrons
   b) Element with 2 electrons
   c) Element with 12 electrons
   d) Element with 20 electrons

3. The atomic numbers of the elements are: Be(4), O(8), Si(14), Cl(17). Which elements have valency equal to 2 (1)
   a) Be, Si
   b) Si, Cl
   c) Be, O
   d) Cl, O

4. Give one example of
   a) Polyatomic ion (1)
   b) Polyatomic molecule (1)

5. Calculate the percentage of carbon in C3H8. (2)

6. a) Give one application of isotopes. (1)

   b) If an ion M^{3+} contains 10 electrons and 14 neutrons. What are the atomic number and mass number of the element M? What is the name and symbol of the element M? (2)

7. When 5g of calcium is burnt in 2g of oxygen, then 7g of Calcium Oxide is produced. What mass of calcium oxide will be produced when 5g of calcium is burnt in 20g of oxygen? Which law of chemical combination will govern your answer? State the law. (3)

PHYSICS (14)

1. If upthrust U is equal to 1/4 the weight of the object in air, then the weight felt in the liquid is (1)
   a) 1/4 W
   b) 3/4 W
   c) 1/2 W
   d) 2 W

2. If a submarine floats inside the sea, then at its position: (1)
   a) W>U
   b) W<U
   c) W=U
   d) U>0

3. Which one of the following is not a unit of energy (1)
   a) Joule
   b) Newton metre
   c) Kilowatt
   d) Kilowatt hour

4. Water stored in a dam possesses (1)

a) no energy
b) electrical energy
c) kinetic energy
d) potential energy

5. i) State Archimedes principle (1)
ii) Give two applications of Archimedes principle (1)

6. A man of 60kg runs up a flight of 30 steps in 15seconds. If each step is 20cm high, calculate the power developed by the man ($g=10m/s^2$) (2)

7. a) State the law of conservation of energy. (1)
b) What are the energy transformations occurring in
i. Electric motor (1)
ii. Pendulum (1)

8. a) State the SI units of thrust and pressure (1)

b) Which will exert more pressure, a 100kg mass on $10m^2$ or 50kg mass on $4m^2$? (2)
Give reason.

THE END