First Terminal Examination Model question Paper Answer key

BIOLOGY

Standard: VIII
Time: 40 minutes
Total Score: 20

Section A: Answer any 3 questions from 1 to 4. Each question carries 1 score. (3x1=3)

1. **Which of the following is NOT a macronutrient required by plants?**
   Answer: (c) Boron
   Explanation: Nitrogen, Phosphorus, and Potassium are macronutrients required in large quantities by plants, while Boron is a micronutrient needed in smaller amounts.

2. **Identify the agricultural method that helps overcome space constraints by growing crops in vertically stacked layers.**
   Answer: (b) Vertical Farming
   Explanation: Vertical farming involves growing crops in vertically stacked layers, making it ideal for overcoming space constraints, especially in urban areas.

3. **Find the odd one out and write the common feature of the others.**
   Nitrogen, Phosphorus, Potassium, Calcium, Iron.
   Answer: Odd one out: Iron
   Common feature: The others (Nitrogen, Phosphorus, Potassium, Calcium) are macronutrients required in large quantities by plants, while Iron is a micronutrient.

4. **What is the name of the technique used to produce a large number of plants with the characteristics of the parent plant by growing tissues in a nutrient medium?**
   Answer: (c) Tissue Culture
   Explanation: Tissue culture involves growing plant tissues in a nutrient medium to produce saplings with the characteristics of the parent plant.

Section B: Answer any 4 questions from 5 to 9. Each question carries 2 scores. (4x2=8)

5. a) **How does vertical farming help overcome space constraints?**
   Answer: Vertical farming allows crops to be grown in vertically stacked layers, enabling cultivation in limited spaces, such as urban areas.
   b) **Name one advantage of vertical farming related to water usage.**
   Answer: It reduces water usage by incorporating systems like hydroponics or aeroponics, which use water more efficiently.

6. a) **What is the primary goal of IPM in agriculture?**
   Answer: The primary goal of IPM is to control pest multiplication without harming crops, using environmentally friendly methods.
   b) **Name one method used in IPM to control pests without relying on harmful pesticides.**
   Answer: Using mechanical pest control methods, such as nets or traps.

7. **A student is setting up a nutrition garden at school using local vegetable varieties.**
   a) **Why are local vegetable varieties preferred for cultivation?**

Answer: Local varieties are well-suited to the local environment and have inherent resistance to pests and diseases, reducing the need for pesticides.
b) **How do these varieties contribute to ecological balance?**
Answer: They support local pollinators and beneficial insects, helping maintain ecological balance.

8. **Observe Fig. 8.4 (Urey-Miller Experiment).**
   a) **What was the purpose of the Urey-Miller experiment?**
   Answer: The purpose was to recreate the conditions of primitive Earth to demonstrate that biomolecules, like amino acids, could be synthesized from inorganic components.
   b) **Name one biomolecule synthesized in this experiment.**
   Answer: Amino acids.

9. **Complete the concept map based on the types of fertilisers used in agriculture:**
   Fertilisers
   - **Organic Fertilisers**
     - **Examples**: Compost, Manure
   - **Inorganic Fertilisers**
     - **Examples**: Urea, Ammonium Nitrate
       Explanation: Organic fertilisers are derived from natural sources like compost and manure, while inorganic fertilisers are chemically synthesized, such as urea and ammonium nitrate.

Section C: Answer any 3 questions from 10 to 13. Each question carries 3 scores. (3x3=9)

10. a) **What is integrated farming?**
    Answer: Integrated farming is the practice of nurturing diverse living organisms, such as crops, birds, and fish, together in a single farming system.
    b) **Name one benefit of integrating animals with crop cultivation.**
    Answer: It enhances resource efficiency, as animal waste can be used as organic fertiliser for crops.
    c) **Suggest one example of an integrated farming practice that could be implemented in a local farm.**
    Answer: Combining poultry farming with vegetable cultivation, where chicken manure is used to fertilise crops.

11. a) **Describe the characteristics of the primitive Earth's atmosphere.**
    Answer: The primitive Earth's atmosphere had high temperatures, no free oxygen, and contained gases like hydrogen, methane, carbon dioxide, hydrogen sulphide, ammonia, and water vapour.
    b) **Name two sources of energy that assisted the formation of biomolecules.**
    Answer: Sunlight and lightning.
    c) **What is the significance of the primitive cell in the origin of life?**
    Answer: The primitive cell, capable of self-replication with nucleic acids and a lipid sheath, was the first form of life, leading to the evolution of more complex organisms.

12. a) **Name one key difference between prokaryotic and eukaryotic cells.**
Answer: Prokaryotic cells lack a membrane-bound nucleus, while eukaryotic cells have a membrane-bound nucleus.
b) **What is the significance of eukaryotic cells in the evolution of complex organisms?**
Answer: Eukaryotic cells, with membrane-bound organelles, allowed for greater complexity and specialization, enabling the evolution of multicellular organisms.
c) **Name one organelle found in eukaryotic cells but absent in prokaryotic cells.**
Answer: Mitochondrion.

13. a) **What is a GM crop?**
Answer: A GM crop is a plant whose genetic constitution has been altered through genetic engineering to incorporate new traits.
b) **Give one example of a GM crop and its modified trait.**
Answer: Cotton plant resistant to pest attacks.
c) **Why do some people believe GM crops may pose a threat to indigenous species?**
Answer: GM crops may crossbreed with indigenous species, potentially reducing biodiversity or introducing traits that could disrupt ecosystems.