

# HIGHER SECONDARY EXAMINATIONS MARCH 2012

HSE –I

Time - I hour

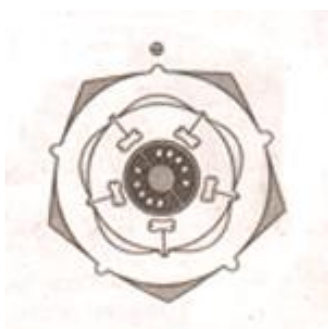
Max.score - 30

## BOTANY

1. The Addition of nostoc and anabena increases the yield in Paddy. Give the reason for the increase in field  
1 Score

2. Fill up the blanks of observing the relationship of the first pair  
Amyloplast – Carbohydrate      Aleuroplast-----  
Cell - CellMembrane      Vacuole-----  
1 Score

3. Observe the floral diagram given below. Identify the family and construct floral formula



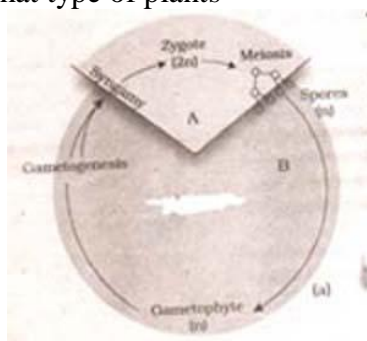
1 ½ Score

4. Identify the following statements on the basis of external features

1. "underground parts of a plants are not always roots"
2. Flower is a motified shoot.

1 ½ Score

5. (a) Identify the type of life cycle in the given diagram (diagram of halplontic)  
b) Mention the plant group in which it belongs  
c) Give an example for that type of plants



2 Score

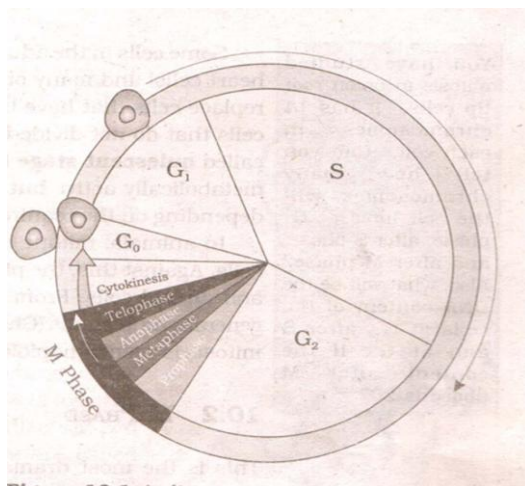
6. Stem Continues to increase in girth due to the activity of vascular cambium. Later another tissue called cork cambium also develops. How does the activity of there cambium differ from each other  
2 Score

7. Give reason "grittiness nature of sappota fruit pulp  
1 Score

Match the following

- |                      |                      |         |
|----------------------|----------------------|---------|
| 8. Robert Brown      | - Mycoplasma         |         |
| Smallest Cell        | - Blue green algae   |         |
| Prokaryote           | - Nucleus            |         |
| Singer and Nicholson | - Ribosomes          |         |
|                      | - Fluid mosaic Model | 2 Score |

9. With the help of this pie diagram what are the major events in each phases of Cell cycle



1 ½ Score

10. 'X' shaped structure called chiasmata occur during a particular stage of cell division

- Name the stage
  - What is the significance of this type of cell division ?
- 1 ½ Score

11. Plants absorb water from soil through root hairs and move to xylem by two pathways

- Name the pathway of water movement
  - Explain anyone of the pathways
- 2 Score

- 12) The Root nodule must contain all the necessary biochemical components for  $N_2$  fixation to occur .comment on
- 1 ½ Score

- 13) Plants can grow even in the absence of soil. Name the technique of soil less culture ?

½ Score

- 14) 1) Breakdown of glucose to pyruvic acid is glycolysis

- How many Molecules of pyruvic acid is produced from a glucose molecule.
- Write the steps in which ATP is used during glycolysis

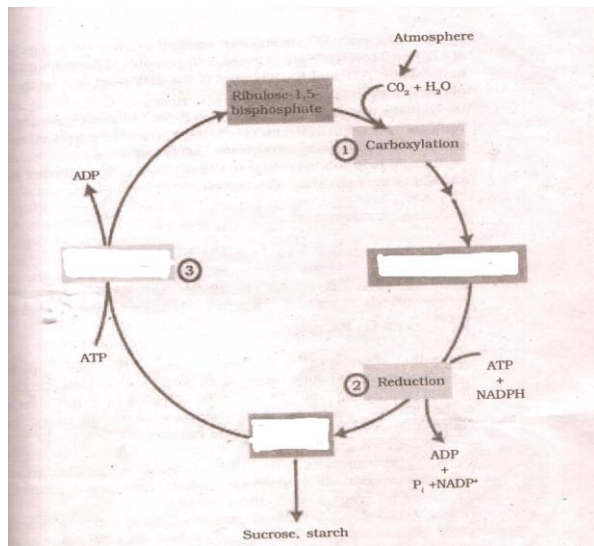
OR

4 Score

- 2) The TCA cycle starts with the condensation of acetyl group with OAA and  $H_2O$  to yield Citric acid.

- Name the enzyme catalyzing the reaction
- How many NAPH molecules are produced in TCA cycle.
- How many  $FADH_2$  molecules are produced
- How many ATP Molecules are produced

(15) Observe the following Cycle



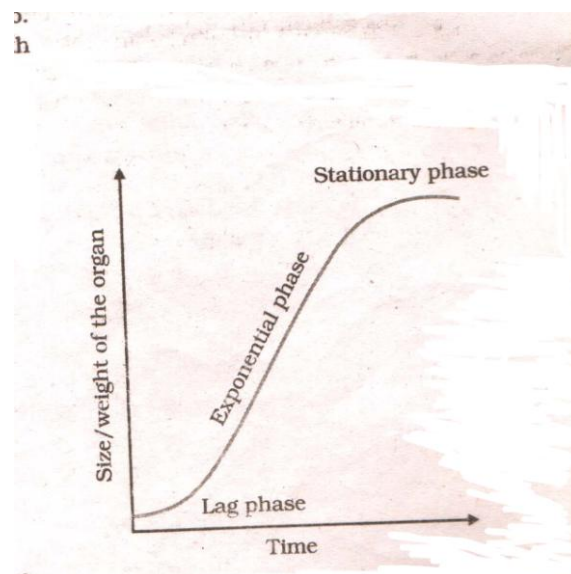
4 Score

- (1) Fill up the blank spaces?
- (2) Name the cycle?
- (3) Where does the cycle occurs
- (4) Explain the main steps

(16) Growth pattern of a plant is displaced in the graph .Analyze the figure and answer the questions

- (a) Name the various phase of growth
- (b) Name the type of curve
- (c) What is growth?

2 Score



17. Name the Plant hormone called stress hormone. Why it is called so?

1 Score