

MODEL EXAMINATION QUESTION PAPER 2012
PART III-BOTANY

Time-1 Hour
Cool of Time:10 mt
Maxscore-30

HSE-I

1. Based on the relationship, fill in the blanks

- a) Archaeobacteria in salty areas : Halophiles :: Archaeobacteria in gut of animals::-----
b) Cucumber: tendril:: Bougainvillea: (1)

2 Underground parts of plants are not always roots. Justify. (1)

3. Explain the role of leg-haemoglobin in nitrogen fixation. (1)

4. Classify these organisms under proper headings –Cyanobacteria and, Algae.
(Sargassum, ,nostoc, chlorella, anabaena) (1)

5. Explain three types of plants based on photoperiodism? (1.5)

6. Which hormone will add, if you are asked to help a farmer to
a) Quickly ripens fruit.
b) Bolt a resette plant
c) Initiate rooting in a twig (1.5)

7. Name any one phenomena involved in absorption of water and one pathway of movement of water (2)

8. Given below are some nutrients required for normal plant growth. Categorize them into Macro and Micro nutrients.
Carbon, Nitrogen, Oxygen, Iron, Sulphur, Copper, Chlorine, Potassium.. (2)

9. Match the column A, B & C Appropriately

- | A | B | C |
|------------------|-----------|--------------------|
| a) Mitochondria | Cisternae | Cellular secretion |
| b) Golgi complex | Polysome | Photosynthesis |
| c) Chloroplast | Cristae | Protein synthe4sis |
| d) Ribosome | Grana | Respiration . |
- (2)

10. Priya prepared a floral formula by examining a plant .She observed the following characters
The flower was bisexual, actinomorphic, with five fused sepals, five free petals, five free stamens, and two united carpels with superior ovary. Write the floral formula and identify the family. Write 2 economically important plants (3)

11. Briefly explain the following structures

- a) Synaptonemal complex
b) Chiasmata.
c) During which stage of meiosis these structures are formed? (3)

12. Some anatomical characters are given in brackets. Arrange them in three columns under root, stem and leaves.

(Conjoint open bundles, mesophyll cells, endarch xylem, radial bundles, bulliform cells on epidermis, casparian thickenings in endodermis, exarch xylem, trichomes present)

(3)

13 (a) What is Respiratory quotient ? Mention three types of substrates based on R.Q.

(b) What is fermentation and their types?

(4)

14. Bio synthetic pathway (Calvin cycle) of photosynthesis takes place in the stroma of the chloroplast .

a. Name three important steps in this cycle.

b. Name the enzyme involved in the first step.

c. Write four differences between, C3 pathway and C4 pathway.

(4)

PREPARED BY

GROUP I

MUVATTUPUZHA CLUSTER 2012