

MODEL EXAMINATION 2011—2012

HSE I

BIOLOGY

Marks:30

Time: 1hr

PART.A---BOTANY

I. By observing the given pair and answer the question

(a) Ribosomes----Protein Synthesis

Peroxisomes----

(b) Rhodophyceae----- Phycoerythrin

Phaeophyceae-----

.5*2=1

2. Fresh mangoes can serve for a prolonged period of time when it is placed in highly concentrated salt solution. Some physiological changes take place in the cell. Comment on the changes. 2

3. Microbes decompose the dead remains and waste products of plants and animals producing ammonia which is rapidly converted to nitrites and to nitrates. Name the (a) and (b) and chemical equation of (c) and (d)

(a) Nitrogenous compounds to ammonia

(b) Nitrites to Nitrates

(c) Conversion of ammonia to Nitrite

(d) Conversion of Nitrite to nitrate

(e) Name the enzyme involved in the process

2.5

4. In living organisms at gamete formation meiosis takes place. So the gametes produced are Haploid

(a) In which stage of meiosis chromosome number will be reduced to half ?

(b) What is Synapsis?

(c) In which Stage crossing over takes place?

(d) What is crossing over

3

5. Practical application of phytohormones are given below. Arrange them in correct order in table provided

(a) Root initiation

- (b) Bolting
- (c) Parthenocarpy
- (d) Stress hormone
- (e) Induce fruit ripening
- (f) Production Hydrolytic enzyme
- (g) Eradication of weeds
- (h) Apical dominance
- (i) True cell division factor
- (j) Cell division and cell differentiation

2.5

Auxin	Gibberellin	Cytokins	Ethylene	ABA

6. Write the floral formula of fabaceae. Explain the floral characters of that family 2.5

7. Match the following

2

a. placentation	Arrangement of flowers on an axis
b. Aestivation	Arrangement of leaves on stem
c. phyllotaxy	Arrangement of ovules in the ovary
d. Inflorescence	Arrangement of petals on the thalamus

8. Xylem and Phloem are complex tissues . Is this statement is true or false comment. 2

9. Ramu and Raju are best friends .They collect different types of plants from their school compound. How to help them to identify the various plant groups

(a) Suggest a classification help them to classify the plant groups

(b) which are the various plant groups

2

10. In the early morning water drops are seen at the tip of leaves of certain plants

(a) What is the process that water escape from the plants in form of water drops

(b) Name the special cells that responsible for this process 2

11. In Angiosperms growth in thickness is due to the secondary growth in dicot stem and dicot root. Differentiate the secondary growth in dicot stem and dicot root. 3

12. In living organisms ATP are produced by breaking down of substances and organisms yield energy

(a) Which are the energy yielding process in living organisms?

(b) Name the two types of that process

(c) One step is common to the two types of process. Which is this?

(d) Where does that step takes place

(e) Explain the step that produce energy in the form of ATP 4

13. Give names of the following

(a) Gametophyte of fern

(b) Gametophyte of moss plant

1.5

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