2020

B.Sc Honours(Botany)

PART-III

Paper : XI

Plant physiology, Biochemistry, Pharmacognosy.

Full Marks-80 Time-4 Hours

Answer any five out of seven questions: (5×16)

1. In an experiment to determine the stomatal frequency of supplied leaf,the number of stomata of different area of a Basella leaf are listed below and the area of the microscopic field is 0.00101 cm^2 .

Surface of the leaf	Region of the leaf surface	Number of observations	Number of stomata per field
Upper surface	Apex	1 2 3	8 6 5
	Middle	1 2 3	7 4 5
	Base	1 2 3	5 4 6

Lower surface	Apex	1 2 3	10 11 12
	Middle	1 2 3	9 7 8
	Base	1 2 3	7 7 5

Write the principal, requirements and procedure of the experiment. Calculate the stomatal frequency and comment.(3+3+4+3+3)

2. In an experiment to determine the Osmotic pressure in storage tissue by weighing method, the potato tubers were kept in different molar concentration of Sucrose solutions and initial and final weight of the potato tubers were tabulated as follows...

Concentration	Initial weight (gm)	Final weight (gm)
0	3.61	4.03
0.1	3.84	4.10
0.2	3.88	4.02
0.3	3.18	3.10
0.4	3.36	3.25
0.5	3.49	2.71

0.6	3.68	2.77

Write down the principal,requirements and procedure of the experiment.Calculate the Osmotic pressure of the storage tissue of potato and comment.(3+3+4+3+3)

3.In an experiment the initial and final weight of transpiration setup are 445gm and 443gm respectively; and the initial and final weight of evaporation setup are 90gm and 80gm respectively. Total area of the leaf is 28400 mm^2 and area of the petridish is 6900 mm^2 .Write the principal,requirements and procedure of the experiment and calculate the transpiration and evaporation rate and comment.(3+3+3+3+4)

4. In an experiment compere the imbibation of water by starchy proteinatious and fatty seeds. Each type of seeds were 5 gm in weight, after 1 hour final weight were starchy seed:5.27gm,proteinatious seed:7.36g,fatty seed:5.88gm. Write the principal, requirements, procedure, calculation and comment on the experiment.(3+2+3+4+4)

5.Write the confirmatory tests for

1.Citric acid

2.Oxalic acid

3.Malic acid

4.Tartaric acid. (4+4+4+4)

6. Write a short note on Molisch's Test. Write the difference between ruducing and non-reducing sugar. Write the confirmatory tests for reducing sugar.(4+4+8)

7. Write down the principal, chemical preparation and procedure of microscopic evaluation of powder drug.Write down the procedures of Histochemical tests for alkaloids.

(4+4+4+4)