**PG/IIIS/BOT/302.1 & 302.2/23**
**(New)**

# M.Sc. 3rd Semester Examination, 2023

## BOTANY

PAPER – BOT-302.1 & 302.2 (New)

*Full Marks* : 50

*Time* : 2 hours

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

## PAPER — BOT-302.1

[ *Marks* : 20 ]

( *Plant Physiology* )

### GROUP – A

Answer any **two** questions from the following : $2 \times 2$

1. Distinguish between dormancy and quiescence.

2. What is phytochromobilin ?

3. What is Hayflick phenomenon ?

4. What are SDGs and SAGs ?

## GROUP – B

Write short notes on any **two** from the following : $4 \times 2$

5. Phototropin

6. Role of ethylene in fruit ripening

7. Polar transport of auxin

8. Hypersensitive response mediated PCD.

## GROUP – C

Answer any **one** question from the following : $8 \times 1$

9. Discuss in detail the major causes of seed

dormancy. Write the methods that could be employed to overcome seed dormancy. 4 + 4

**10.** Write down the structure of phytochrome. Explain how phytochrome influences flowering in long-day and short-day plants. 3 + 5

## PAPER — BOT-302.2

[ *Marks* : 20 ]

( *Biochemistry and Molecular Biology* )

### GROUP – A

Answer any **two** questions from the following : $2 \times 2$

**1.** State the function of carnitine in beta oxidation of fatty acids.

**2.** Name one inducer and one inhibitor of nodulation by *Rhizobium leguminosarium*.

3. What is epimerism ?

4. Differentiate between true alkaloid and proto-alkaloid.

## GROUP – B

Write short notes on any **two** from the following : $4 \times 2$

5. Plant phenolics

6. Ramachandran plot

7. Mechanism of root nodule formation

8. Small peptides of biological importance.

## GROUP – C

Answer any **one** question from the following : $8 \times 1$

9. Briefly describe the process of fatty acid biosynthesis mentioning the enzymes involved.

Write a short note on structure and function of acetyl CoA carboxylase. 5 + 3

**10.** Schematically represent the pathway of starch biosynthesis. Discuss about the reduction products of monosaccharide derivatives of biological importance. 5 + 3

**[ Internal Assessment – 10 Marks ]**