

**U.G. 5th Semester Examination-2021**

**BOTANY**

**[HONOURS]**

**Discipline Specific Elective (DSE)**

**Course Code : BOT-H-DSE-T-02B**

**(Stress Biology)**

Full Marks : 40

Time : 2½ 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.*

1. Answer any **five** of the following questions: 2×5=10
- What are reactive oxygen species?
  - How stress tolerance differs from stress avoidance?
  - What is hardening?
  - Define heavy metal.
  - Name a plant metabolite that can act against biotic stress.
  - What is hypersensitive response?
  - Mention a physiological response of plant against salinity.
  - What is MAPK?

2. Answer any **two** of the following questions: 5×2=10
- How do stomata respond to water deficit?
  - Mention the role of glutathione-ascorbate cycle for H<sub>2</sub>O<sub>2</sub> detoxification.
  - What are heat shock proteins? Mention their functions.
  - Write a short note on phytoremediation.
3. Answer any **two** of the following questions:

10×2=20

- Discuss briefly about oxidative damage of lipids caused by ROS and the scavenging mechanism adopted by plants. 5+5
  - Describe the physiological mechanisms of plant to confer environmental stresses. 10
  - Elucidate the way by which plant can combat the biotic stresses, emphasizing PR proteins, SAR and role of jasmonates. 4+3+3
  - Discuss briefly how temperature stresses damage the plant and how plant can response against the stress. 5+5
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