

S.No. of Question Paper: 12754
Name of the Course : **B. Sc. Life Sciences**
Semester : VI
Name of the Paper : Economic Botany and Biotechnology
Unique Paper Code : 42167901

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Question no. **1** of both sections is **COMPULSORY**.
3. Attempt **three** questions from Section **A** and **three** questions from Section **B** including question number 1 of both sections.
4. Attempt **all** parts of a section together. Write botanical names and draw well-labelled diagrams wherever necessary.

Section - A

1. a. Define the following (5 X 0.5 = 2.5)
 - i. Perisperm
 - ii. Lathyrism
 - iii. Fermentation
 - iv. Aleurone layer
 - v. Ginning
- b. Give the botanical name, family of the following (5 X 1 = 5)
 - i. A plant yielding both fibres and oil of commercial importance
 - ii. Poor man's meat
 - iii. A plant rich in alkaloid theine
 - iv. A staple cereal
 - v. A plant which is source of oil that is used as histological clearing agent

2. Write notes on of the following (any **three**) (3 X 5 = 15)
- Economic importance of legumes
 - Drying and non-drying oils
 - Processing of cotton
 - Economic importance of spices
3. Draw well labelled diagrams of the following (any **three**) (3 X 5 = 15)
- L.S. of clove bud
 - V.S. of tea leaf
 - L.S. of wheat grain
 - C.S. of black pepper corn
4. Give a detailed account of the following (any **two**) (2 X 7.5 = 15)
- Vavilov's centres of origin and their significance
 - Green Revolution
 - Tea and it's processing

Section B

1. a. Expand the following (5 X 1 = 5)
- RAPD
 - AGE
 - GFP
 - Ti plasmid
 - EtBr
- b. Match the following (5X 0.5= 2.5)
- | | |
|------------------------|------------------------------------|
| i. Totipotency | a. Cry protein |
| ii. <i>Bt</i> | b. PCR |
| iii. Endosperm culture | c. Laminar Air Flow |
| iv. HEPA filter | d. Regeneration from a single cell |
| v. Kary Mullis | e. Triploid plants |

2. Write short notes on the following (any **three**) (3 X 5 = 15)
- a. Human Gene Therapy
 - b. DNA fingerprinting
 - c. Southern Blotting
 - d. Micropropagation
3. Differentiate between the following (any **three**) (3 X 5 = 15)
- a. Androgenesis and Gynogenesis
 - b. AGE and PAGE
 - c. Reporter and selectable marker genes
 - d. Direct and Indirect Organogenesis
4. Attempt the following (any **two**) (2 X 7.5 = 15)
- a. Define molecular DNA markers. Enlist their applications in plant sciences. Briefly explain any one molecular marker.
 - b. Discuss briefly one direct and one indirect method of gene transfer used in plant biotechnology.
 - c. Elaborate on PCR and RT-PCR