



Date: 27-10-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART – A

Answer ALL the Questions

I. Choose the correct answer

(5 x 1 = 5 Marks)

- Which among the following is a biopesticide?
a) *Anabaena azollaeb*) *Bacillus subtilis*
c) *Escherichia colid*) *Bacillus thuringiensis*
- The process of creating a mutation at a defined site in a DNA molecule is known as
a) Spontaneous b) Site directed c) Induced mutation d) Insertion
- A method of eliminating viruses from plants exposed to temperature between 35-40° C at a defined period is
a) Thermotherapy b) Cryotherapy c) Chemotherapy d) Virus indexing
- A phytochemical which does not belong to the volatile oil class
a) Peppermint b) Clove c) Garlic d) Castor oil
- UPOV is
a) Patent b) US patent c) Indian patent d) Convention for plant variety

II. State whether the following are true or false.

(5x1=5 Marks)

- SSR marker consists of a complex repetitive sequence.
- Plant ferridoxin like protein plays an important role in enhancing resistance to bacterial disease.
- Stevioside is an artificial sweetener produced upon biotransformation.
- Flavones are proteins having fungal resistance.
- Convention on biological diversity provides for conservation and sustainable utilization of genetic resources.

III. Complete the following

(5 x 1= 5 Marks)

- A _____ gene is a region of DNA that initiates transcription of a particular gene
- Luciferase gene belongs to the category of _____ gene.
- T-DNA possess the property of _____.
- _____ are bioactive compounds which contain nitrogenous elements.
- _____ is represented by graphical method.

IV. Answer the following within 50 words

(5 x 1 = 5 Marks)

- Define clastogens.
- What is meant by site-directed mutagenesis?
- What are cryoprotectants?
- Mention any one method employed for separation of phytochemical compounds.
- Write a note on food and drug administration.

PART B

Answer the following each within 500 words.

(5 x 8 = 40 marks)

Draw diagrams wherever necessary.

21. (a) How will you maintain virus free stock?

OR

(b) Discuss various methods of protoplast isolation.

22. (a) Narrate the technique and utility of electroporation.

OR

(b) Compare and contrast selectable and scorable markers.

23. (a) What are the advantages of mutation in crop improvement?

OR

(b) Describe the production technology and uses of plantibodies.

24. (a) Give the role of bacterial resistant genes in raising disease free crops.

OR

(b) Describe the steps and technique involved in alkaloid production in medicinal plants.

25. (a) Write a note on inter-relationship and conflicts between farmer's right act and breeder's right.

OR

(b) Discuss the ethical issues in producing genetically modified crop plants

PART – C

Answer any TWO of the following, each within 1500 words.

(2 x 20 = 40 Marks)

Draw diagrams wherever necessary.

26. How will you develop transgenic rice for beta carotene?

27. Narrate the technique, factors influencing particle gun bombardment technique.

Mention the merits and demerits.

28. Elaborate on the biology of plant-pathogen interaction.

29. Explain the importance of Nagoya protocol in food safety and benefit sharing.
