

**D-6616**

**M.Sc. (I<sup>st</sup> Semester) Examination, 2020**

**BOTANY**

**(Recombiant DNA Technology and Proteomics)**

*Time Allowed : Three Hours*

*Maximum Marks : 70*

*Minimum Pass Marks : 24*

**SECTION - A**

**Note :** Attempt any ten questions. Each question carries one mark. **1×10=10**

**Q. 1.** Fill in the blanks :

- (i) The first recombinant DNA molecule was synthesized in the year \_\_\_\_\_.
- (ii) The study of full complement of proteins expressed by a genome is called \_\_\_\_\_.
- (iii) The effect of protein on an entire organism is described in \_\_\_\_\_.

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- (iv) Which technique separates charged particles using electric field \_\_\_\_\_ ?
- (v) Electrophoresis was developed by \_\_\_\_\_.
- (vi) When is electrophoresis not used \_\_\_\_\_ ?

Multiple choice question :

- (vii) Which of these restriction enzymes produce blunt ends ?
  - (a) Sal I
  - (b) Eco RV
  - (c) Xho
  - (d) Hind III

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(viii) Restriction enzymes are named for :

- (a) The person who discovered
- (b) The bacterium they are derived from
- (c) The viral DNA that they attack
- (d) None of the above

(ix) The units of proteins is :

- (a) Amino acid
- (b) Lactic acid
- (c) Citric acid
- (d) All of these

(x) Proteins can be produced species :

- (a) Genome
- (b) Proteome

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(c) Proteomics

(d) None of these

(xi) Restriction enzymes :

- (a) Protect bacteria from viral infection
- (b) Cut DNA in staggered fashion
- (c) Cut DNA producing a blunt end
- (d) All of the above

(xii) In gel electrophoresis DNA molecules

migrate from \_\_\_\_\_ to \_\_\_\_\_ end

of the gel :

- (a) Negative – Positive
- (b) Basic – Acidic
- (c) Long – Short
- (d) Positive to Negative

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**SECTION - B**

**Note :** Attempt any five questions. Each question carries two marks. **5×2=10**

**Q. 2.** Very short answer type (25-30 words) :

- (i) What is modifying enzymes ?
- (ii) What is synthetic DNA vectors ?
- (iii) What is proteins extraction ?
- (iv) What is the principal of DNA sequencing ?
- (v) Describe the column chromato biograph.
- (vi) What is the breeding ?
- (vii) Write the introduction of proteomics.

**SECTION - C**

**Note :** Attempt any five questions. Each question carries 4 marks. **5×4=20**

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**Q. 3.** Short answer type (250 words) :

- (i) What is the enzymatic function of restriction enzymes ?
- (ii) What is a cloning vector ?
- (iii) What are the typical characteristics of a cloning vector ?
- (iv) What are the application of DNA technology ?
- (v) What are the types of DNA technology ?
- (vi) What do you mean by Transgenic Plants ?
- (vii) Define the electrophoresis.

**SECTION - D**

**Note :** Attempt any three questions. Each question carries 10 marks. **3×10=30**

**Q. 4.** Essay type (more than 500 words) :

- (i) Describe the principle of recombinant DNA technology.

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- (ii) Describe the isolation of specific genes from bacteria and higher plants.
- (iii) Write the comparative account of translation in prokaryotes and eukaryotes in prokaryote and Eukaryotes.
- (iv) Describe the electrophoresis and column chromatography.

