

**BACHELOR OF SCIENCE (CBCS-2018 COURSE)**  
**T. Y. B. Sc. Sem-V : WINTER :- 2021**  
**SUBJECT: BOTANY : MOLECULAR BIOLOGY & BIOCHEMISTRY**

**Day : Saturday**  
**Date 29-01-2022**

**W-18426-2021**

**Time : 02:00 PM-05:00 PM**  
**Max. Marks: 60**

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Draw neat and labeled diagram **WHEREVER** necessary.
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**Q.1** Attempt **ANY TWO** of the following: **[12]**

- a) Describe functions of monosaccharides and polysaccharides.
- b) Explain mechanism of enzyme action.
- c) Give classification of proteins and describe in brief its synthesis.

**Q.2** Attempt **ANY TWO** of the following: **[12]**

- a) Give principle and technique in gene cloning.
- b) Describe structure and functions of RNA.
- c) Explain in brief chloroplast transformation and gives its functions.

**Q.3** Attempt **ANY TWO** of the following: **[12]**

- a) Give various forms of DNA.
- b) Explain difference between cloning vectors and choice of vectors.
- c) Describe concept of genetic engineering.

**Q.4** Attempt **ANY THREE** of the following: **[12]**

- a) Describe properties and functions of amino acids.
- b) Comment on DNA as a genetic material.
- c) What is DNA sequencing according to Gilbert method?
- d) Explain role of agrobacterium.

**Q.5** Attempt **ANY FOUR** of the following: **[12]**

- a) Write note on finger printing.
- b) What is polymer chain reaction?
- c) Comment on BT cotton plant.
- d) Write note on lock-key hypothesis.
- e) Give various functions of proteins.

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