

January 2023
B.Tech - 3rd Sem
Biology (BSC-01)

Duration: 3 Hours

Max. Marks: 75

Instructions:

- It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.
- Answer any four questions from Part-B in detail.
- Different sub-parts of a question are to be attempted adjacent to each other.

PART A

- Q1**
- | | |
|--|-------|
| (a) Autotrophs | (1.5) |
| (b) Model Organisms | (1.5) |
| (c) Gene interaction | (1.5) |
| (d) Mitosis | (1.5) |
| (e) Amino acids | (1.5) |
| (f) Enzyme | (1.5) |
| (g) Genetic Code | (1.5) |
| (h) Endergonic and Exergonic reactions | (1.5) |
| (i) Sterilization | (1.5) |
| (j) Single celled organisms | (1.5) |

PART B

- Q2**
- | | |
|---|------|
| (a) Explain the Mendel's laws of inheritance. | (10) |
| (b) Discuss the concept of meiosis and mitosis as a part of genetics. | (5) |
- Q3**
- | | |
|---|------|
| (a) Explain the mechanism of enzyme action. | (5) |
| (b) Discuss the classification of enzymes. | (10) |
- Q4** Explain hierarchy in protein structure by keeping in mind primary, secondary, tertiary, and quaternary structures present in proteins. (15)
- Q5**
- | | |
|--|-----|
| (a) Elucidate the characteristics of genetic code. | (5) |
|--|-----|

(b) Discuss the structure of DNA and its importance as genetic material. (10)

Q6 (a) Explain the significance of monosaccharides and polysaccharides. (10)

(b) Discuss classification based on (a) cellularity - unicellular or multicellular

(b) ultrastructure - prokaryotes or eukaryotes. (5)

Q7 Write brief notes on the following: (a) Classification of microorganisms (b)

Glycolysis (15)



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