DESIGN OF
QUESTION PAPER

Subject : **BIOTECHNOLOGY**
Paper : Theory
Class : XI
Full Mark : 70
Time : 3 Hours

I — **WEIGHTAGE TO OBJECTIVES:**

Objectives	Marks	Percentage
Knowledge (K)	14	20
Understanding (U)	28	40
Application (A)	21	30
Skill (S)	7	10
Total :	**70**	**100**

II — **WEIGHTAGE TO FORM OF QUESTIONS**:

Form of Questions	No. of Question	Time (in minute)	Marks	Percentage
Essay/Long Answer(E/LA)	3	60	15	21
Short Answer(SA-I)	7	56	21	30
Short Answer(SA-II)	10	40	20	29
Very Short Answer(VSA)	10	20	10	14
MCQ	4	4	4	6
Total:	**34**	**180**	**70**	**100**

III — **WEIGHTAGE TO CONTENT:**

	UNIT/CONTENTS:	Marks	Percentage
I.	Introduction to Biotechnology	10	10
II.	Biomolecules	20	28
III.	Cell and Development	20	28
IV.	Genetics & Molecular Biology	20	28
	Total :	**70**	**100**

IV — **SCHEME OF SECTIONS : Nil**

V — **SCHEME OF OPTIONS : Nil**

VI — **DIFFICULTY LEVEL :**

Difficulty : 20%
Average : 50%
Easy : 30%

Abbreviation : K(Knowledge), U(Understanding), A(Application), Skill(S), E(Essay Type), SA(Short Answer Type), VSA(Very Short Answer Type), MCQ(Multiple Choice Question)

DESIGN OF
QUESTION PAPER

Subject : **BIOTECHNOLOGY**
Paper : Theory
Class : XII
Full Mark : 70
Time : 3 Hours

I — WEIGHTAGE TO OBJECTIVES:

Objectives	Marks	Percentage
Knowledge (K)	14	20
Understanding (U)	28	40
Application (A)	21	30
Skill (S)	7	10
Total :	**70**	**100**

II — WEIGHTAGE TO FORM OF QUESTIONS:

Form of Questions	No. of Question	Time (in minute)	Marks	Percentage
Essay/Long Answer (E/LA)	3	60	15	21
Short Answer (SA-I)	7	42	21	30
Short Answer (SA-II)	10	40	20	29
Very Short Answer (VSA)	10	30	10	14
MCQ	4	8	4	6
Total:	**34**	**180**	**70**	**100**

III — WEIGHTAGE TO CONTENT:

		UNIT/CONTENTS:	Marks	Percentage
1		**Protein & Gene Manipulation**		
	I	Protein Structure & Engineering	15	15
	II	Recombinant DNA Technology	15	21.4
	III	Genomics & Bioinformatics	10	14.3
2		**Cell Culture Technology**		
	I	Microbial Culture & Application	10	14.3
	II	Plant Cell Culture & Application	10	14.3
	III	Animal Cell Culture & Application	10	14.3
		Total :	**70**	**100**

IV — SCHEME OF SECTIONS : Nil

V — SCHEME OF OPTIONS : Nil

VI — DIFFICULTY LEVEL :

Difficulty : 20%
Average : 50%
Easy : 30%

Abbreviation : K(Knowledge), U(Understanding), A(Application), Skill(S), E(Essay Type), SA(Short Answer Type),VSA(Very Short Answer Type), MCQ(Multiple Choice Question)