

University Institute of Engineering & Technology

(Recognised Under Section 2(f) and 12B of UGC)

Kurukshetra University, Kurukshetra

THEORY EXAMINATION – JULY 2021	
B.TECH - BT	SEMESTER - VI

TIME – 4 Hrs.

M.M. - 75

PAPER - BTE-304

SUBJECT- Plant Biotechnology

INSTRUCTIONS TO BE FOLLOWED

- The candidates will be required to attempt All questions in Part-A and Part-B (Compulsory Sections). Attempt any four questions from Part-C selecting at least one from each unit.
- Allotted time for examination is 4 hours that includes time for downloading the question paper, writing answers, scanning of answer sheets and uploading the sheets on the Attendance Sheet Cum Answer Sheet Uploading google form. The link will be closed after the stipulated time.
- The PDF files should be saved as Roll No. and Subject Code.
- Maximum Page Limit should be 36 (Thirty Six) for attempting the question paper on A4 sheets which could be downloaded and printed from the sample sheets given in the UIET Website.
- Over-attemptation should be avoided.
- Handwriting should be neat and clean and diagrams should be clear and contrasted.
- The candidate should not write their Mobile No. otherwise Unfair Means Case will be made.
- While attempting the paper, the candidate will use blue/black pen only.
- Before attempting the paper, the candidate will ensure that he/she has downloaded the correct question paper. No complaint for attempting wrong question paper by the candidate will be entertained.
- Candidate must ensure that he/she has put his/her signature on each page of the answer sheet used by him/her. Answer sheet without the signature of the candidate will not be evaluated.
- Attempt parts A, B & C separately. Do not inter-mix them. Write neatly & mention the question number clearly.

PART-A (15 Marks)

Q. No. – 1 Answer the following questions.

15x1=15

(i)	What is disarming(1)
(ii)	What is the length of each border sequence in Ti-plasmid(1)
(iii)	Which substrate is used by Gus gene for blue colour. (1)
(iv)	What is other name for gene gun.(1)
(v)	What role do opines play in crown gall disease. (1)
(vi)	Genetically engineered male sterile crop plants may be produced by inserting -----gene.(1)
(vii)	What do you mean by chimeric gene vector.(1)
(viii)	What is the function of Hydrogenase enzyme.(1)
(ix)	Write the functions of Nif H, Nif D, Nif K (3)
(x)	Name the enzymes involved in genetic engineering of Golden Rice (2)
(xi)	Define embryo culture, Suspension culture.(2)

PART-B (20 Marks)

UNIT-I		
2	How chromosome elimination technique is helpful in crop improvement.	5
UNIT-II		
3	Describe different techniques for cryopreservation of tissue/cells.	5
UNIT-III		
4	Write the organization T DNA region of Ti plasmid	5
UNIT-IV		
5	How transgenic plants can be used as bioreactors for production of Vitamins.	5

PART-C (40 Marks)

UNIT-I		
6	What are haploids explain different ways of producing invitro haploid .	10
7	Write the applications and limitation of somatic hybridisation	10
UNIT-II		
8	Define cybrids write about different ways for obtaining somatic hybrids and their screening methods .	10
9	Explain the process of nitrogen fixation in plants by using different nif genes.	10

UNIT-III

10	Describe the construct of Ti plasmid and mechanism of TDNA transfer.	10
11	Explain different vectorless methods of gene transfer	10
UNIT-IV		
12	Why terminator gene technology was opposed how recombinase and lethal genes are involved in this technique.	10
13	Outline the steps for production of transgenic plants for increased shelf life and insect resistance	10