

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
B.Tech/ BTDD/M.Tech (Semester VIII, XI, II), Test 2 (April 2016)

Course Code: 14I1WBT531

Max. Marks: 25

Course Name: PLANT BIOTECHNOLOGY

Course Credit: 03

Max. Time: 1:30 Hrs

Attempt all questions. Carrying of mobile phones will be treated as the case of unfair means. Calculator is allowed.

Q.1 Do as directed

0.5X4=2

- i. Target specificity of CRIPR-Cas 9 based genome editing system relies on protein-DNA interaction while that of ZFN on formation of ribo-nucleotide complex. T/F
- ii. PHA with short side chains and homopolymeric in nature are inflexible and harder. T/F
- iii. Double strand break induced by genome editing tools get repaired either by ____ or ____.
- iv. DNA binding domain of a ZFN consists of 4 fingers. What would be length of its recognition sequence?

Q.2

1.5X6=9

- a) Give any two basic differences between post transcriptional and post translational gene silencing.
- b) Mention any two reasons why plants are being tested for the production of recombinant antibodies.
- c) Elaborate on the functional domains of ZNF as genome editing tool.
- d) Name the components/complexes of CRISPR-Cas9 which mediate 1) recruitment of RNase III and Cas 9 enzyme, 2) recognition of sequences to be cleaved, 3) cleavage of target sequences
- e) What is specific about copolymer PHB/V?
- f) How off target cleavage event induced by ZFN can be improved?

Q.3 What is the main aim of molecular farming? Describe the bottlenecks of molecular farming.

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Q.4 Discuss production of following in transgenic plants emphasizing on importance, traditional production, economics of production and status of commercialization a) Trypsin b) Avidin c) Aprotinin

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Q.5 Describe the chemistry and biosynthesis of PHB, steps taken for its production in cytoplasm of transgenic Arabidopsis. How its accumulation was subsequently improved in plastids?

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