

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-2 EXAMINATION- April -2018

B.Tech/ M.Tech 8th, 4th Semester

COURSE CODE: 1411WBT531

MAX. MARKS:25

COURSE NAME: Plant Biotechnology

COURSE CREDITS: 03

MAX. TIME: 1 Hrs 30 Min.

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q.1

(CO I, CO II) (20 min.)

- a. How following influence transcriptional gene silencing? i) Histone deacetylation ii) Histone methylation
- b. Mention any four reasons which warrant removal of antibiotic resistance SMG from transgenic plants
- c. What do you understand by positive and negative selection with respect to selection of transgenic plants?
- d. Explain the mode of action of following negative selection markers i) codA gene ii) ornithine deacetylase gene

2x4=8

Q.2

(CO III, CO IV) (20 min.)

How post transcriptional gene silencing was discovered? Discuss work of Fire and Mello.

5

Q.3

(COIII, CO IV) (25 min.)

- a. What is principle of co-transformation as selectable marker removal method? Explain three different variants of this strategy. Cite suitable references.
- b. Enlist methods used to improve co-transformation for marker removal and explain transient positive selection of co-transformed plants

6

Q.4

(CO I, CO II, COIV) (25 min.)

- a. What do you understand with transposones? Explain with help of Ac/Ds elements as example. Draw a general construct using this strategy for marker removal.
- b. What could be the additional advantage of using transposons based marker removal in following situations? Also mention which gene SMG/GOI should be flanked by transposon sequences to derive such advantage. i) when working with transformation recalcitrant species ii) working with asexually propagated species

6