

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

Make Up EXAMINATION- April -2017

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

COURSE CODE: 1411WBT531

MAX. MARKS: 25

COURSE NAME: Plant Biotechnology

COURSE CREDITS: 03

MAX. TIME: 1 H 30 Min

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

Q.1

8x2=16

- a. Enlist the components of plant transgene cassette along with their brief functions.
- b. Write about any two non antibiotic/ herbicide resistant selectable makers which can be used in plant transformation work.
- c. What are applications of tissue specific promoters? Give any three examples of tissue specific promoters
- d. Enlist ideal features and any two applications of reporter genes.
- e. How post translational gene silencing/RNAi was discovered in plants
- f. Why designing gene targeting sequence in case of CRISPR Cas is more simpler than that of ZFN and TALEN
- g. Briefly explain following: Cas9, SgRNA, Proto spacer adjacent motif
- h. How it is possible to target any DNA sequence of interest via) i) Zinc fingers of ZFN
ii) Monomers of TALE proteins

Q.2 Write brief note on tetracycline regulated promoters

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Q.3 You are interested to develop marker free transgenic plants via site-specific recombination-mediated SMG removal, but do not want continuous expression of recombinase as it effect growth of plant, Discuss any two strategies in detail with example from literature you will use for recobinase mediated marker removal while avoiding it continuous expression.

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