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(A-7) Seat No: _____ No. of Printed Pages : 2

SARDAR PATEL UNIVERSITY

B.Sc. Biotechnology, V Semester (NC)

US05CBIT03

Plant Biotechnology

Thursday, 12/05/2016

10:30 am to 1:30 pm

Total Marks: 70

Q.1 Multiple choice questions : **(10)**

i) Most common opines synthase genes present in the T-DNA are_____

a) *gus,gat* b) *cry,gus* c) *ocs,nos* d) *nos, cry*

ii) _____ system consists of two autonomously replicating plasmid with A. tumefaciance.

a) Replicating vector b) Binary vector c) Co integrated vector d) None of these

iii) Octapine type Ti plasmid has two closely adjoining region of .

a) 13 kb T_L and 8 kb T_R b) 23 kb T_L and 2 kb T_R

c) 18 kb T_L and 8 kb T_R d) 13 kb TL and 23 kb T_R

iv) RNA molecules that exhibit catalytic activities are called_____

a) Satellite DNA b) Abzymes c) Ribozymes d) None of these

v) Which of the following is not a selectable marker?

a) NPTII b) GFP c) Gentamycin acetyltransferase d) hpt

vi) Which enzyme is used for getting Transgenic Tomato?

a) ACC Synthase b) PGT Synthase c) CAT Synthase d) GR reductase

vii) Best Cryoproctants are-

a) Sucrose, Glycerol b) Glycerol, activated charcoal

c) Sucrose, Acetone d) None of these

viii) Temperature of Solid CO_2 is_____

a) -79°C b) -14°C c) -150°C d) -196°C

ix) Reversion of nondifferentiated cells to differentiated cells is known as_____

a) Differentiation b) Dedifferentiation c) Mutation d) Inversion

x) Which of the following is not types of Secondary Metabolites?

a) Alkaloids b) Phenolic compounds

c) Polymeric isoprene derivatives d) None of these

Q.2 Answer the following questions--- (Attempt any TEN) **(20)**

i) Draw a labeled diagram of Ti Plasmid..

ii) Write three properties of Ti plasmid which do not allow their direct use.

(P.T.O)

iii) Draw a flow chart for the production of Transgenic Plants using direct gene delivery methods.
iv) Write scopes of Agricultural Biotechnology.
v) Give a short note on Insect Resistance Genes from animals.
vi) Define Abiotic and Biotic stress with Examples.
vii) Define: Thawing and Storage.
viii) Write the advantages of in vitro conservation of plant material over in vivo conservation.
ix) Which two major consideration have to be taken into account for freezing of specimens..
x) Give the disadvantages associated with Somaclonal Variatons.
xi) What is the importance of secondary metabolite production in Plants?
xii) Write in brief about Agrobacterium Rhizogenes.

Q.3 a) Explain in detail about antibiotic resistance Markers. **(05)**
b) Discuss about Co integrated Vectors. **(05)**

OR

Q.3 a) Write in detail about Virulence genes and chromosomal genes of Ti Plasmid. **(05)**
b) Give a detailed account on Chemical gene transfer methods. **(05)**

Q.4 a) Give a note on Disease resistance Plant using PR Protein and different types of antimicrobial proteins.. **(05)**
b) Give a detailed note on "Flavr Savr" tomato. **(05)**

OR

Q.4 a) Write in detail about the Insect resistance genes from higher plants. **(05)**
b) Give a note on edible vaccines. **(05)**

Q.5 What is Cryopreservation? Explain in detail all freezing techniqus. Write its applications also. **(10)**

OR

Q.5 Give a detailed note on all slow growth methods of cryopreservation. Explain the determination of survival of stored plant material by using different dyes. **(10)**

Q.6 a) Explain in detail the molecular mechanism behind Somaclonal Variations . **(05)**
b) Describe the scheme for obtaining Somaclonal Variation **(05)**

OR

Q. 6 a) Discuss in detail about Hairy Root Culture. **(05)**
b) Give an account on the applications of Secondary Metabolites. **(05)**

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