[56]

No.of printed pages:2

SARDAR PATEL UNIVERSITY

M.Sc. (Integrated) Biotechnology,

Fifth Semester Examination

Monday, 03rd December 2012

Time: 10:30 a.m. to 1:30 p.m.

PS05CIGB03

PS05CIGB03 – BIOTECHNOLOGY PRINCIPLE AND PRACTICES

Total Marks:70

Q-1 Multiple choice questions: (08)

(1) _____ an enzyme necessary for the biosynthesis of aromatic amino acids in the chloroplast.
(a) ALS (b) EPSP
(c) Atrazine (d) Glyphosate

(2) _____ is an irreversible inhibitor for glutamine synthetase in plants and bacteria.
(a) Bromoxynil (b) Sulphonylarea
(c) Phosphinothricin (d) None of these

(3) _____ is commonly used as an osmoticum to prevent subcellular organelles from swelling.
(a) Sucrose (b) Galactose
(c) Glucose (d) Fructose

(4) Which of the following is not employed for plant genomic DNA isolation?
(a) Activated charcoal (b) Liquid nitrogen
(c) Glass beads (d) Inactivated sand

(5) Which of the following enzyme is targeted to improve photosynthesis efficiency of plants?
(a) Rubisco (b) PEPCO
(c) Cellulase (d) Pectinase

(6) Which of the following is preferable choice for explants?
(a) Shoot tip (b) Root tip
(c) Matured leaf (d) Bark

(7) If the amount of nucleic acid is very small or heavily contaminated with impurities, then _____ method can be used for estimation of nucleic acid.
(a) Spectrophotometric method (b) Mini gel method
(c) Fluorescent dye-based method (d) None of these

(8) _____ is tissue transferred between genetically identical individuals.
(a) Autograft (b) Allograft
(c) Isograft (d) Xenograft

Q-2 Answer the following : (attempt any seven) (14)

(1) What is biotechnology? List out its scope.
(2) Briefly discuss the role of EDTA and Phenol in isolation of DNA.
(3) Enlist any four component of protein extraction buffer.
(4) Enlist the application of micro chip technology.
(5) Define single cell protein.
(6) List out the enzymes responsible for improving the shelf life of fruits.
(7) Define "bio-filters".
(8) Define composting and land-fill.
(9) Write in brief about recombinant vaccines.

Q-3

(a)	Discuss about the cell fractionation techniques in detail.	(06)
(b)	Write a note on YAC.	(06)
	OR	
(b)	What is HGP? Explain its goal and advantages of HGP.	(06)

Q-4

(a)	Explain various steps of chemical synthesis of DNA.	(06)
(b)	Write a descriptive note on "Mammalian cell culture".	(06)
	OR	
(b)	Explain method of quantification of DNA using Spectrophotometric of DNA. How do confirm the purity or contamination of extracted DNA?	(06)

Q-5

(a)	Define Xenotransplantation and explain any one organ transplantation in detail.	(06)
(b)	Enlist and explain various industrial applications of transgenic microbes.	(06)
	OR	
(b)	Explain the concept of "gene therapy" and discuss its various applications.	(06)

Q-6

(a)	What is Bioremediation? Explain the production of biodiesel and ethanol from biomass.	(06)
(b)	Discuss about transgenic sheep and transgenic mice in detail.	(06)
	OR	
(b)	What is transgenic plant? Give a detail account on insect resistance plant.	(06)

****