

University of Pune
Department of Management Sciences
MBA-BT Semester I
Mid Semester Exam Sept 2013
102- Basics of Biotechnology and Bioinformatics

Question Paper: 40 marks

Time: 2Hrs

Instructions: i) Answer Section I and II on separate answer sheet
ii) Each Section carries 20 marks. iii) Marks are as indicated.

Section I

ANSWER ANY FOUR OF THE FOLLOWING.
ALL QUESTIONS CARRY EQUAL MARKS

- (a) What are soma clones? How they are induced? Give examples?
- (b) Applications of somatic embryogenesis
- (c) Define Biotechnology? Describe the salient features of Biotechnology industry and its status?
- (d) Advantages and disadvantages of *in vitro* propagation; *ex vitro* vs. *in vitro* rooting
- (e) Preparative steps required for glassware, explants and media for initiation of cultures

Section II

Q1. Write short notes on any two (10 MARKS):

- a. Single Cell Protein
- b. 2-D gel electrophoresis
- c. Size exclusion chromatography
- d. Tertiary structure of proteins and its importance

Q2. Answer the following (half mark each)

- a) The main function of centrosomes is _____.
- b) The basic repeating unit of a DNA molecule is a _____.
- c) The restriction enzymes that are used in molecular biology belong to _____.
- d) Assembly of two subunits 40S and 60S of ribosome is _____s.
- e) The site on tRNA which bonds to mRNA is _____.
- f) During splicing _____ is removed and _____ are joined together.
- g) _____ salt was found to yield maximum number of transformants.
- h) Taq polymerase is preferred for PCR because _____.
- i) The cultured animal cells are harvested by _____ using low speed.
- j) Self-replicating DNA molecules used to transfer foreign DNA segments between host cells are called _____.

1 mark each

- k) The pH at which the protein has zero net charge is called as _____.
- l) Salting out process involves _____.
- m) Variables of fermentation process are _____, _____, _____ and _____.
- n) 3D structure of protein can be determined by _____ and _____.
- o) Primary unit operations of downstream processing are _____ and _____.