

III B.Tech. II Semester Regular Examinations, April/May -2005
ANALYTICAL TECHNIQUES IN BIOTECHNOLOGY
(Bio-Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Describe the common compound microscope used in microbiological laboratories.
2. Discuss image formation in scanning electron microscope.
3. What are Nucleotides? At what wavelength can they be absorbed and why?
4. What is meant by Isoelectric point of a protein?
5. Explain the difference between Column Chromatography and Planar Chromatography.
6. Explain Sanger's dideoxy method of DNA sequencing.
7. What is the difference between direct and indirect ELISA techniques?
8. What do total dissolved solids in a bioprocess mean? How are they estimated?

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1. Write the importance of the special condensers used in Dark Field Microscopy.
2. What is the principle behind contrast enhancement of TEM specimens?
3. How are the different types of sugars differentiated?
4. How is Electrophoresis of DNA done in Agarose gel Electrophoresis?
5. Explain the principle in Southern Hybridization.
6. Write short notes on -
 - (a) Quantitative PCR
 - (b) Reverse PCR
7. Discuss the role of enzyme labeled antibodies in Immunoassays.
8. Discuss product formation kinetics in cell culture.

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1. Explain the following terms -
 - (a) Magnification
 - (b) Resolution
2. What do you understand by confocal microscopy?
3. Write about the classification and biological roles of lipids.
4. Describe how polyacrylamide gels get polymerized.
5. Explain the principle in Southern Hybridization.
6. Describe PCR based DNA amplification process.
7. Describe Immunofluorescence.
8. What is meant by flow injection analysis?

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1. Explain the following terms associated with Fluorescent Microscope.
 - (a) Barrier filter
 - (b) Heat filter
 - (c) Fluorochromes
 - (d) Exciter filter
2. What do you mean by specimen preparation of TEM?
3. What are Nucleotides? At what wavelength can they be absorbed and why?
4. What is the principle behind Electrophoresis?
5. Differentiate between Southern, Western and Northern Blot techniques.
6. Write short notes on -
 - (a) Quantitative PCR
 - (b) Reverse PCR
7. Explain ELISA technique in detail.
8. How is gaseous Oxygen concentrations measured?
