Q. Code: 660965

Reg. No. | | | | | | | | | |

M.E. / M.TECH. DEGREE EXAMINATIONS, MAY 2019

Second Semester

BY18023 – ANALYTICAL TECHNIQUES IN BIOTECHNOLOGY

(*Biotechnology*)

(Regulation 2018)

Time: Three Hours **Maximum : 100 Marks**

Answer **ALL** questions

PART A - (10 X 2 = 20 Marks)

1. What is the principle of 2D gel electrophoresis?
2. What do you mean by *insitu* enzyme detection?
3. Define immuno precipitation technique.
4. Name the technique used to detect recombinant Proteins.
5. Define Beer- Lambert'z law.
6. Write the instrumentation of UV spectrophotometer.
7. How are electrons interact with specimens kept in slides in microscopy techniques?
8. What is the application of Video microscopy?
9. What are biosensors? Give examples.
10. Write the principle of PCR technique.

PART B - (5 X16 = 80 Marks)

11. (a) (i) Write on SDS-PAGE technique and write it's applications. **(8)**

(ii) What are the different types of staining techniques used in Electrophoresis techniques? **(8)**

(OR)

(b) (i) Write in detail on Pulse Field Gel electrophoresis technique. **(8)**

(ii) Write in detail on gradient gel electrophoresis. **(8)**

12. (a) (i) Explain in detail on ion exchange chromatography and its applications. **(8)**

(ii) Write in detail on gel filtration chromatography technique. **(8)**

(OR)

(b) (i) Explain in detail on affinity chromatography technique and its application. **(8)**

(ii) Explain the role of Reverse Phase HPLC in proteomic research. **(8)**

13. (a) (i) Write the principle, method and applications of IR spectro-photometric technique. **(8)**

(ii) Explain in detail on mass spectrophotometric technique and its applications. **(8)**

(OR)

(b) (i) Explain in detail on NMR techniques and its applications. **(8)**

(ii) Write in detail on FTIR technique and its applications. **(8)**

14. (a) (i) Elaborate on Electron Transmission Microscopy Techniques and its applications. **(8)**

(ii) Elaborate on Fluorescence Microscopy techniques and its applications. **(8)**

(OR)

(b) (i) Write on phase contrast microscopy and mention its significance. **(8)**

(ii) Explain on Scanning probe microscopy and its uses. **(8)**

15. (a) (i) Write on Sanger's method of DNA Sequencing. **(8)**

(ii) Elaborate on ELISA technique and its applications. **(8)**

(OR)

(b) (i) Explain in detail on nano biotechnology in diagnosis of biomolecules. **(8)**

(ii) Write on biochips technology and its applications. **(8)**