Roll No.....

Total No. of Units : 04
Total No. of Printed Pages : 03

Code No. : 03/108

Third Semester Examination, Dec. 2018

M.Sc. BIOTECHNOLOGY

Paper - I

INSTRUMENTATION, NANOBIOTECHNOLOGY AND DRUG DESIGNING

Time : 3 Hrs. **Max. Marks : 80**

- Part A and B of each question in each unit consist of very short answer type questions which are to be answered in one or two sentences.
  Part C (Short answer type) of each question will be answered in 200-250 words.
  Part D (Long answer type) of each question should be answered within the word limit 400-450.

Unit - I

Q.1 A. What is the basic difference between HPLC and HPTLC separation techniques? **(2)**

Q.1 B. State Lambert-Beer's law. **(2)**

Q.1 C. Describe chromatograph set-up of HPLC with diagram. **(4)**

OR

Explain the principle of NMR spectroscopy.

Q.1 D. Describe principle and applications of Atomic absorption spectroscopy in detail. **(12)**

P.T.O.

OR

Describe principle, types and applications of ultra centrifugation in detail.

Unit - II

Q.2 A. What are the isotopes of carbon and give its use in biological science? **(2)**

Q.2 B. Mention two differences between TEM and SEM. **(2)**

Q.2 C. Write short note on cryo-preservation. **(4)**

OR

Discuss the principle and application of Scintillation counter.

Q.2 D. Describe types of ELISA and its applications in detail. **(12)**

OR

Describe the process and applications of Lyophilization.

Unit - III

Q.3 A. What do you mean by nanoparticle and nanowires? **(2)**

Q.3 B. Mention two properties of nanoparticle. **(2)**

Q.3 C. Explain the synthesis of metal nanoparticles by colloidal route. **(4)**

OR

Discuss the applicatons of nanoparticles in drug delivery giving suitable example.

Q.3 D. What are the various techniques for synthesis of nanoparticles. Describe any two biological methods used in synthesis of nanoparticles. **(12)**

OR

Describe the various techniques for nanoparticle characterization.

Unit - IV

Q.4 A. What is meant by drug designing? **(2)**

Q.4 B. Mention the names of techniques used in drug discovery. **(2)**

Q.4 C. Write note on Pharmacology. **(4)**

OR

Explain drug discovery cycle.

Q.4 D. Describe basic chemistry involved in drug designing. **(12)**

OR

Describe enzyme inhibition and drug design in details.

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