N (Printed Pages 3)

(20517) Roll No.....

B.Sc.(Micro.)-I Year

3490

B.Sc. (Micro.)Examination, May- 2017

Instrumentation and Culture Tech.

(B-107)

Time : Three Hours] *Maximum Marks :50*

Note : Attempt any **five** questions. **All** questions carry equal marks.

1. Explain the principle, instrumentation and applications of the phase contrast microscope. 10

2. What is buffer solution? Explain the properties of a good buffer system. 10

P.T.O.

3. Explain single beam and double -beam infrared spectrophotometer and their applications. 10

4. Write short notes on the foliowing : 2.5×4=10

(i) Elution techniques

(ii) Chromatogram

(iii) Wave theory of electro magnetic radiation.

(iv) Titration curve for an amino-acid.

5. (i) Why do we obtain steady increase rather than a series of stepwise increase in the number of cells at the log phase of bacterial culture? Explain.

(ii) What is enrichment? Explain use of inhibitory substances for enrichment.

6. Describe the common culture media used for microbial culture. How will you make the choice of medium and prepare it in the laboratory? 10

7. Describe the techniques used for isolation of single cell of fungi from a mixed culture. 10

8. (i) What is the unique feature of polarography which separates it from other electro analytical techniques? 5

(ii) Sketch a polaro gram and label two important details of the polarographic wave on your diagram. 5

(20518) Roll No. RN0935135026

B. Sc. (Micro.)-I Year

3490

B. Sc. (Micro.) Examination, May 2018

Instrumentation and Culture Tech.

(B-107)

Time : Three Hours] *[Maximum Marks : 50*

Note : Answer any *Five* questions. All questions carry equal marks.

1. What do you understand by transmission electron microscope (TEM) ? Discuss its principle, design and applications. 10

2. Describe in detail the procedure to prepair most commonly used media for bacteria. 10

3. Write short notes on the following : 5×2=10

(a) Different sterilization techniques used in culture media

(b) Confocal microscopy.

4. Define spectrophotometry. Give a detailed account of visible spectrophotometer. 10

5. Explain briefly : 4+3+3=10

(a) Electromagnetic radiation

(b) Absorption spectrum

(c) Emission spectrum.

6. Define X-ray crystallography. Give a detailed account of X-ray diffraction. 10

7. Define enrichment. Explain in detail enrichment techniques for microbial culture. 10

8. A typical bacterial growth curve can be divided into how many distinct phases ? Explain. 10

(20519) Roll No. R1809351300005

Total Questions : 8] [Printed Pages : 2

3490

B.Sc. (Micro.) Ist Year Examination, May-2019

INSTRUMENTATION AND CULTURE TECH.

(B-107)

[B.Sc. (Micro.)]

Time : 3 Hrs.] *[M.M. : 50*

Note :- Attempt any *five* questions. All questions carry equal marks.

1. Explain STM (Scanning Tunnelling Microscopy). What is the difference between scanning electron microscopy (SEM) and transmission electron microscope (TEM) ? 10

2. Write short notes on the following :

   (a) Advantages and limitations of phase contrast microscopy.

   (b) Principles of simple and electron microscopy. 5,5

3. What do you understand by spectroscopy ? Explain principle and advantages of emission spectroscopy. 10

4. Write short notes on the following :

   (a) Wave theory of electromagnetic radiation

   (b) Explain the use of high resolution manometry and impedance pH manometry. 5,5

5. Explain principles of polarography. What feature of polarography sets keep it apart from other electroanalytical techniques ? 10

6. Write short notes on the following :

   (a) Electromagnetic radiation

   (b) Colorimetry 5,5

7. Explain the principle, methodology and applications of density gradient centrifugation. 10

8. What do you understand by culture ? Explain different types of culture media used in microbiology. 10