(20518) Roll No. 1S93S02688

B.Sc.(Biotech.)-III Year

NS-3479

B. Sc. (Biotechnology) Examination, May 2018

Genomics and Proteomics

(B-307)

(New)

Time : Three Hours] *[Maximum Marks : 75*

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

1. Explain DNA sequencing techniques in detail. 15

2. Write an essay on applications of Proteomics ? 15

3. Explain computer aided drug designing in detail. 15

4. Elaborate the concept of structural genomics. 15

5. Explain the strategies of sequencing the entire genome of an organism. 15

6. Write notes on the following : 7½×2=15

(a) Protein-protein interactions

(b) QSAR.

7. Write explanatory notes on the following : 7½×2=15

(a) Pharmacogenomics

(b) EST contigs.

8. What is Proteome ? Explain web based tools for proteomic data analysis . 15

9. Write notes on the following : 7½×2=15

(a) MALDI

(b) Genetic map.

10. Describe the various techniques of Proteomics in cancer research. 15

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(20517) Roll No. 935204.....

B.Sc. (Bio. Tech.)-III Year

3479(N)

B.Sc. (Bio-Tech.) Examination, May 2017

Bioprocess Engineering and Technology

B-307 (Old) & B-311 (New)

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

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

1. Describe various uses of enzymes in food and other industries. 20

2. How can you prepare a pure culture of a microorganism for-

   (a) Short-term storage

   (b) Long-term storage

3. What do you mean by sterilization? Briefly describe the different techniques of sterilization. 20

P.T.O.

4. List the various types of metabolites produced through fermentation and describe the production of any one of them in detail. 20

5. (a) Explain a fed-batch bioprocess.

2×10=20

(b) Write the substrates and applications of solid state fermentation.

6. Name any four physical and / or chemical properties of enzymes which might be useful to change by site- directed mutagenesis. Support your answer by taking an example of an engineered protein/enzyme. 20

7. (a) Continuous culture is beneficial to batch culture in terms of productivity. How?

2×10=20

(b) Different methods of air sterilization.

8. Describe briefly the molecular mechanism of enzyme action.

9. What is bioseparation? Describe the techniques have been used for cell fractionation.

10. Write short notes on any **four** of the following. 5×4=20

(a) Affinity chromatography

(b) Reverse osmosis

(c) Contribution of Louis Pasteur

(d) Feed back inhibition

(e) Genetically engineered microbes

(20518)

Roll No. 1593502688

B. Sc.(Biotech.)-III Year

3479(N)

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

Bioprocess Engineering & Technology

[B-307 (Old) & B-311(New)]

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

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

1. Discuss in brief about the isolation, screening and maintenance of industrially important micro-organisms. 20

2. Discuss and compare mechanically agiated contractor and bubble column reactor as fermenter. 20

3. What is fed-batch culture and what are its benefits in microbial technology ? How is it different from a batch culture ? 20

4. What is downstreaming processing ? Describe the steps involved in the modelling and simulation of bioprocess. 20

5. Write short notes on any two of the following : 10×2=20
   (i) Physiochemical methods of cell disruption
   (ii) Treatment of effluent and its disposal
   (iii) Methods for determination of cell growth in a fermentation process.

6. What is centrifugation ? Discuss the various factors which affects sedimentation of a molecule during centrifugation. 20

7. Write short notes on any four of the following: 5×4=20
   (i) Alexander Flemming
   (ii) Air sterilization
   (iii) Crystallization
   (iv) Cheese making by proteases
   (v) Beer mashing.

8. Define enzymes. Discuss production, recovery and scaling up of enzymes and their role in food and other industries. 20

9. What is the use of chromatography in fermentation process ? Discuss the application of adsorption chromatography. 20

10. Write notes on the following : 10×2=20
   (i) Microbial improvement for increased yield
   (ii) Use of sterilization, aeration and agitation in bioprocess.

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(20620) Roll No. .....

B.Sc. (Biotech.)-III Year

NS-3479 (CV)

B.Sc. (Biotechnology) Examination, June- 2020

Genomics and Proteomics

(B-307)

Time : Two Hours] *[Maximum Marks : 75*

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

1. What is Whole Genome Shotgun (WGS) approach? Discuss the use of WGS approach for human genome sequencing
2. Discuss different methods available for proteome analysis.
3. Write detailed note on :
   (a) Mass spectrophotometry
   (b) Use of 2-D- PAGE is protein analysis.
4. Define genetic polymorphism and discuss the role of single nucleotide

P.T.O.

polymorphisms (SNPs) in human diseases.

5. Write short notes on the following :
   (a) Restriction site polymorphism
   (b) EST Contigs
   (c) Pharmacogenomics
6. How do the DNA-C hips and micro arrays help in genomics and proteomics studies.
7. What is MALDI? Compare MALDI with other methods of ionization for MS and discuss their relative merits and demerits.
8. What is Mpping? Write its kinds. Differentiate between genetic map and physical map.
9. Write short note on :
   (a) Yeast two hybrid system
   (b) Bioinformatics tools for insillico proteomics research
   (c) Sanger's method of sequencing
10. Discuss the use of various techniques of proteomics in Cancer research.