Course Structure

Theory Papers – I- 45 lectures

1) Fundamentals and basics of Industrial Microbiology
2) Applied Industrial Microbiology
3) Techniques in Industrial Microbiology

Practical course – I 12 lectures

Industrial Visit/Project

Examination Pattern-

Total 100 Marks

1) Theory -70 Marks
2) Practical -20 Marks
3) Visit/Project- 10 Marks
Theory Papers – I- Advanced Industrial Microbiology 
Total 45 lectures

Unit-Fundamentals basics of Industrial Microbiology 
Total Lectures 11

1) History and scope of Industrial Microbiology
2) Basic concepts of Fermentations
3) Fermentation Media
4) Design and types of typical bioreactor

Unit-II Applied Industrial Microbiology 
Total Lectures 10

1) Screening of :-Primary and Secondary
2) Strain improvement
3) Preservation of industrially important microorganisms
4) Inoculum Development
5) Scale up of fermentation

Unit-III Microbial assay and Techniques in Industrial Microbiology 
Total Lectures 12

1) Diffusion Assay
2) Turbidometric assay
3) Sterilization Techniques
4) Downstream processes
   a) Filtration
   b) Centrifugation
   c) Flocculation
   d) Crystallization
   e) Solvent extraction
   f) Chromatography

Unit-IV Industrial Productions 
Total Lectures 12

1) SCP
2) Penicillin
3) Acetic acid
4) Alcohol
1) Preparation of media for industrial production products
2) Preparation of Reagents and Solutions
   a) Phosphate buffer
   b) 1N NaOH
   c) 1N HCL
3) Estimation of alcohol by using $\text{K}_2\text{Cr}_2\text{O}_7$
4) Screening of Amylase producers by Replica plate method
Examination Pattern

Theory Examination 70 Marks

Time 2.30hrs

Q.1. Multiple Choice Questions 14 Marks

1 to 14 ----- (Each question carries 1 Mark)

Q.2. Short answer Questions 14 Marks

Solve any 7 from 9 questions

(Each question carries 2 Marks)

Q.3. Section A) and B) 14 Marks

Section A) Answer the following questions (10 Marks)

Attempt any two questions from 3

(Each question carries 5 Marks)

Section B) Answer the following question (4 Marks)

Attempt any one question from 2

Q.4. Answer the following questions 14 Marks

Attempt any two questions from 3

(Each question carries 7 Marks)

Q.5. Answer the following questions 14 Marks

Attempt any two questions from 3

(Each question carries 7 Marks)
Examination Pattern

Practical Examination

Time 2.30hrs

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Q.1. Proceed following experiment and write results 10 Marks

Q.2. Proceed the following experiment and write results 10 Marks

Q. 3. Project report- 10 Marks

Or

Q. 3. Industrial visit report- 10 Marks

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