

**नोट :** सभी 04 प्रश्न पत्र हल करना अनिवार्य है।

**नोट :** प्रत्येक प्रश्न-पत्र को पृथक्-पृथक् उत्तर-पुस्तिका में लिखना अनिवार्य है।

**Note:** Each paper is compulsorily written on separate answer sheet.

## **FS-1761**

**M. Sc. (Fourth Semester) Examination, 2020**

**APPLIED MICROBIOLOGY**

***Paper : First***

**(Pharmaceutical Microbiology)**

***Maximum Marks : 40***

**Note:** Attempt all questions. Each question carry equal marks. Each question must be answered in maximum 800 words.

1. Write note on role of food and drug administration in pharmaceutical industry.
2. Write notes on microbiological assay of antibiotics.
3. Describe the antifungal and antiviral drugs.
4. Describe the multivalent submit vaccines.
5. Describe the principles of drug targeting and drug delivery in gene therapy.

## **FS-1762**

**M. Sc. (Fourth Semester) Examination, 2020**

**APPLIED MICROBIOLOGY**

***Paper : Second***

**(Applied Microbiology)**

***Maximum Marks : 40***

**Note:** Attempt all questions. Each questions carry equal marks. Each question must be answered in maximum 800 words.

1. Describe DNA fingerprinting and its applications.
2. Describe bio-mineralization and its applications.
3. Describe good manufacturing practices (GMP) and their importance.
4. Describe patenting of traditional knowledge and its protection.
5. Describe different steps in production of vermicompost.

## **FS-1763**

**M. Sc. (Fourth Semester) Examination, 2020**

**APPLIED MICROBIOLOGY**

***Paper : Third***

**(Microbial Fermentation Technology)**

***Maximum Marks : 40***

***Note:*** All questions are compulsory. Each questions carry equal marks. Each question must be answered in maximum 800 words.

1. Describe the methods used to increase yield of microbes.
2. Describe Microbial growth Kinetics.
3. What are various manual and automatic controls used in the fermenters?
4. Describe different steps in downstream processing.
5. Describe flow patterns with different types of impellers.

**FS-1764**

**M. Sc. (Fourth Semester) Examination, 2020**

**APPLIED MICROBIOLOGY**

***Paper : Fourth***

**(Marine Microbiology)**

***Maximum Marks : 40***

***Note:*** All questions are compulsory. All questions carry equal marks. Each question must be answered in maximum 800 words.

1. Describe in detail the chemical and physical factors in marine ecosystem.
2. Describe in detail the energy yielding processes in marine environment.
3. Explain the culture conditions for marine microorganisms.
4. Describe in detail community fingerprinting.
5. Describe the microbial process in eutrophication of coastal waters.