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- (b) Discuss the major challenges in the field of microbiome therapeutics. (6)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 7403

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Unique Paper Code : 2533012015

Name of the Paper : Microbiome in Health and Diseases

Name of the Course : **B.Sc. (H) Microbiology**

Semester / Mode : VIII / UGCF, Part IV

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All** questions carry equal marks.

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1. Write short notes on the following **(any two)** :

(2×6=12)

(a) Nutritional modulation of the gut microbiome

(b) Data pre-processing and quality control

(c) Metaproteomics and its analytical workflow

2. Differentiate between the following **(any two)** :

(2×6=12)

(a) Prebiotics vs Probiotics

(b) Metabolome vs Metaproteome

(c) Clustering vs OUT picking

3. Discuss the role of dysbiosis in the following **(any two)** :
(2×6=12)

(a) Alzheimer's disease

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(b) Typhoid fever

(c) Tuberculosis

4. (a) Describe whole metagenome shotgun sequencing and its advantages over targeted sequencing. (6)

(b) Explain the concept of maintaining a healthy microbiome and its importance in disease prevention. (6)

5. (a) Describe the diversity and functional roles of the respiratory microbiome. (6)

(b) How do antibiotics affect the human microbiota? (6)

6. (a) Explain the interaction between the microbiome and the host immune system. (6)

P.T.O.