

This question paper contains 2 printed pages]

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S. No. of Question Paper : **9561**

Unique Paper Code : **2533012015**

Name of the Paper : **Microbiome in Health and Disease**

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

Semester : **VII**

Duration : **2 Hours**

Maximum Marks : **60**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any *five* questions.

All questions carry equal marks.

1. (a) Discuss the use of synbiotics in restoring and maintaining a healthy gut microbiome. Support your answer with suitable examples. 4
- (b) Write the names of most common microorganisms (at least 4) present in a healthy human gut. 4
- (c) Give a brief account of cutaneous allergic diseases. 4
2. (a) Explain the concept of Human Microbiome Project. What are its goals ? 6
- (b) Define (any *three*) : 6
 - (i) Metagenome
 - (ii) Unifrac
 - (iii) 'Prakriti' in Ayurveda
 - (iv) Phylogenetic trees.

P.T.O.

3. (a) Explain oral dysbiosis along with its outcomes. 6
- (b) Discuss the gut-brain axis and its significance. 6
4. (a) Describe the use of heat maps in the study of microbiomes. 5
- (b) Prepare a detailed flowchart of whole metagenome shotgun sequencing of a single microbiome sample obtained from an individual's gut. 7
5. (a) Enlist the normal microflora of the buccal cavity of a healthy human being. 4
- (b) Comment on alpha and beta diversity of microbiome samples. 4
- (c) Name the microorganisms missing or surplus in one's gut of the victim of *either* obesity *or* diabetes. 4
6. (a) Describe the various stages of the establishment of gut microbiota from fetus to adulthood. 8
- (b) Why are Fecal transplants gaining so much importance these days ?
Discuss the disadvantages associated with the same as well. 4