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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
07 THRISSUR CLUSTER

FIRST SEMESTER M.TECH. DEGREE EXAMINATION DEC 2017

Civil Engineering Department
Environmental Engineering

07CE6107 ENVIRONMENTAL MICROBIOLOGY

Time : 3 hours

Max.Marks: 60

Answer all six questions. Part 'a' of each question is compulsory.

Answer either part 'b' or part 'c' of each question

Q.no.	Module 1	Marks
1a	How do you classify microorganisms?	4
	Answer b or c	
b	What are the applications of fungi in sanitary engineering?	5
c	Explain the general characteristics of algae.	5
Q.no.	Module 2	Marks
2a	Explain the principle of light microscopy.	4
	Answer b or c	
b	Describe the morphology of a bacterium with a neat figure.	5
c	What is Gram stain and its significance?	5
Q.no.	Module 3	Marks
3a	How do you find the growth rate of a bacterium?	4
	Answer b or c	
b	What are the factors affecting enzyme activity? Explain their effects on metabolic reactions.	5
c	What are selective and maintenance culture media? Illustrate their uses in microbiology.	5

Q.no.	Module 4	Marks
4a	Mention the latest bacteriological standards for drinking water and sources of drinking water.	4

Answer b or c

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| b | Describe various factors affecting activity of soil microorganisms. | 5 |
| c | Explain enumeration of bacteria by plate count test. | 5 |

Q.no.	Module 5	Marks
5a	Illustrate the use of microorganisms in waste utilization.	5

Answer b or c

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| b | Explain the microbiology of activated sludge process. | 7 |
| c | Describe the production process of any 3 products in industry with the use of algae. | 7 |

Q.no.	Module 6	Marks
6a	What are the different methods of sterilization?	5

Answer b or c

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| b | Explain the role of microorganisms in Nitrogen cycle. | 7 |
| c | Explain the different mode of transmission of diseases through milk. | 7 |