

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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- Ques.1 A. Answer in detail (Any one out of two)** **07**
- 1) Describe Nitrogen fixation by symbiotic bacteria in detail.
 - 2) Give an elaborate account on Biofertilizers
- Ques.1 B. Answer in brief (Any one out of two)** **04**
- 1) Explain microbial flora of soil with examples.
 - 2) Discuss positive interactions among micro organisms in soil.
- Ques.1 C. Answer the following (Any three out of five)** **03**
- 1) Define : Water holding capacity of soil
 - 2) What is humus ?
 - 3) Write an example of sulfur reducing bacteria.
 - 4) Write an example of proto co operation.
 - 5) What do you mean by rhizoplane?
- Ques.2 A. Answer in detail (Any one out of two)** **07**
- 1) Discuss in detail : Microorganisms as food
 - 2) Explain various food preservation techniques.
- Ques.2 B. Answer in brief (Any one out of two)** **04**
- 1) Explain food poisoning by Gm Negative organisms.
 - 2) Describe any two fermented food products.
- Ques.2 C. Answer the following (Any three out of five)** **03**
- 1) What are GRAS foods ?
 - 2) What is AGmark ?
 - 3) What are Sausages and Sauerkraut ?
 - 4) What are probiotics and prebiotics ?
 - 5) Define : Food borne intoxication
- Ques.3 A. Answer in detail (Any one out of two)** **07**
- 1) Describe microbial analysis of milk
 - 2) Explain milk as a medium
- Ques.3 B. Answer in brief (Any one out of two)** **04**
- 1) Describe preservation of milk
 - 2) What is grading of milk ?
- Ques.3 C. Answer the following (Any three out of five)** **03**
- 1) Which bacterial and fungal species are used in cheese manufacturing ?
 - 2) Define : HTST and UHT
 - 3) Name the pathogens frequently associated with milk
 - 4) What is Kefir and Yogurt ?
 - 5) Write principle of Resazurin Test

Ques.4 A. Answer in detail (Any one out of two)	07
1) Describe Municipal waste water treatment in detail	
2) What is BOD ? Explain Chemical and Microbial properties of waste water	
Ques.4 B. Answer in brief (Any one out of two)	04
1) Explain Sanitary survey	
2) Explain water purification approaches	
Ques.4 C. Answer the following (Any three out of five)	03
1) Define : Sludge	
2) Give names of water borne infections you are knowing	
3) What is the drawback of Iron bacteria in water ?	
4) What is composting ?	
5) What is a trickling filter ?	
Ques.5 A. Answer in detail (Any one out of two)	07
1) Give a detailed account on TQM	
2) Describe the scope of Pharmaceutical Microbiology	
Ques.5 B. Answer in brief (Any one out of two)	04
1) Explain ISO 9001 : 2000 standards	
2) Describe sterility testing in detail	
Ques.5 C. Answer the following (Any three out of five)	03
1) Give full forms of : BP, USP and IP	
2) What is LAL test ?	
3) What is GMP ?	
4) What is Pharmacology ?	
5) What is the difference between QC and QA ?	
