

**FURTHER DETAILS REGARDING MAIN TOPICS OF
PROGRAMME NO. 05 / 2010**

MICROBIOLOGIST – HEALTH SERVICES

(GOVT.ANALYTICAL LABORATORIES)

CATEGORY NO. 30/2009

1. Basic Concept & History of Food Microbiology

Uses of microbes in industry-importance of safe food- factors affecting food safety- microorganisms in food-fermented food products

2. Fermentation

Chemostat-turbidostat-types of fermentors- liquid fermentation- downstream processing

3. Fermented Foods

Yeast- lactic acid bacteria- important microorganisms in fermentation- fermented dairy products-fermented vegetables-fermented meats and fish- fermented beverages

4. Spoilage of Food

Factors responsible for food spoilage- spoilage of different foods (meat, poultry, cereals, fruits and vegetables, milk and miscellaneous products)

5. Food Microbiology and Public Health

Food hazards- incidence of food borne illness- risk factors associated-bacterial agents of food borne illness- food borne infections- bacterial and non bacterial agents- food borne diseases due to naturally occurring toxins-lathyrism,,veno-occlusive disease, epidemic dropsy, mycotoxins

6. Food Contamination

Naturally occurring toxicants-toxicants in plant and animal foods-anti nutritional factors in foods- environmental contamination- biological-pesticide-veterinary-drug residues-heavy metals

7. Food Adulteration and Food Additives

Definition-foods commonly adulterated- common adulterants- classification-harmful effects- additives- definition-classification- role

8. Yeast and its Uses

Production of brewer's yeast-baker's yeast-use of yeast products-industrial production of alcohol and beverages

9. Single Cell Protein

Bacterial proteins-fungal proteins-algal proteins-economic aspects-SCP as animal feed

10. Enzymes and Antibiotics

General aspects-enzyme kinetics-production -purification of enzymes-chromatography-HPLC-GLC-Classification, properties and uses of antibiotics-industrial production

11. Microbiology of Food Preservation

Heat processing- microwave radiation- UV radiation-ionizing radiation- high pressure processing- low temperature storage- chemical preservatives- natural food preservatives

12. HACCP

An effective food safety assurance system- need- benefits-identification of CCP's-establishing & monitoring of CCP's- record keeping- verification

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.