

## Question Bank for Food Microbiology

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**Q.1) Define the followings: -**

lipolytic bacteria - Z value - Food infection - fecal coliform bacteria - feedback system-  
Strain Improvement - Bioreaction regulation- Aciduric bacteria – Food toxicoinfection  
F-value – Extrinsic factors - Saccharolytic bacteria – Slime bacteria- Thermal death point –  
Intrinsic factors – Food intoxication - D-value – Food infection - Continuous sterilization -  
Halotolerant bacteria - Implicit factors– Saccharolytic bacteria – Thermal Death Time -  
Osmophilic bacteria – - Proteolytic bacteria- Psychotrophic bacteria- -Thermoduric bacteria -  
Feedback repression of Enzymes- Fed batch fermentation- Thermophilic bacteria – Spore former  
bacteria- Oxygen Independent bacteria-

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**Q.2)**

**ONLY Through a graph or sketch show the followings:**

- 1- Number of bacteria on fresh minced beef stored at different temperatures showing the Level of spoilage symptoms.
  - 2- Effect of water activity on the growth curve of bacteria.
  - 3- How organic acids may affect microbial cells.
  - 4- Comparison of numbers of bacteria and PH in fresh minced beef stored at 5 oC under Permeable and impermeable conditions.
  - 5- Effect of temperature on the lag phase and growth rate of bacteria.
  - 6- Thermal death curve showing the D value.
  - 7- Effect of number of microorganisms on the spoilage time of a food.
  - 8- Effect of temperature on the lag phase and growth rate of bacteria.
  - 9- How a PH approaching the minimum influences the growth curve of an organism.
  - 10- Interaction involved in the selection of a spoilage microflora.
  - 11- Growth of bacteria in vacuum-packed fresh meat stored at 5oC.
  - 12- Effect of PH (optimum & minimum) on the growth curve of an organism.
  - 13- Effect of contamination level on storage life of a food.
  - 14- Flow diagram showing the various forms of foodborne diseases.
  - 15- Survivors curve for two different temperatures showing the D-Values.
  - 16- Thermal death time curve showing the Z- value.
  - 17- Number of bacteria on fresh minced beef stored at different temperatures showing the off Odor & surface slime.
  - 18- Sources of food contamination.
  - 19- Cardinal temperatures of microorganisms.
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**Q.3) Give reasons for the following with an example for the causative agent.**

- 1-Sulfide stinker in canned foods
- 2- Acid curdling of raw milk
- 3- Meat putrefaction
- 4- Lactic acid fermentation in Juices.
- 5-Ropiness in bakery products
- 6- Rancidity in butter
- 7- Microbial spoilage of fish
- 8- Flat sour in canned foods
- 9-Meat rancidity
- 10- Raw milk bitterness
- 11- Milk ropiness
- 12- Fish spoilage

- 13-Sulfite stinker in canned foods
- 14- Blue milk
- 15- Meat souring
- 16-Spoilage of dried foods
- 17-jams spoilage.
- 18-Sweet curdling in raw milk
- 19- Meat souring
- 20- Flat Sour spoilage in canned foods.
- 21- Bitterness of chill cheeses
- 22- Color changes in food through metabolic activity
- 23- Surface taint in butter
- 24- Most bacteria play no role in the spoilage of dried foods.
- 25-The thermal death point of Escherichia coli in cream is higher than skim milk.
- 26- Alarm water content has been suggested as a guide to the storage stability of foods.
- 27- Spoilage of pasteurized milk
- 28- Green rot in egg
- 29- U.V. lights limit its food use to surface application
- 30- Cakes of all types rarely undergo microbial spoilage.
- 31- More bacteria are found in egg yolk than in egg white
- 32- Lowering the redox of an environment by microorganisms
- 33- Spoilage of honey
- 34- Bread moldiness
- 35- Flat sour in acid canned foods
- 36- Black rot in egg
- 37- Colorless rot in egg
- 38- Abnormal flavor & odor in raw milk.
- 39- swelling of carbohydrate canned foods
- 40- swelling of protein canned foods
- 41- Pink rots in egg
- 42- Red rot in egg.
- 43- Bitterness in cheese
- 44- Rancidity of fish
- 45- Spoilage of sterilized milk.
- 46- Whiskers on surface of beef carcasses.
- 47- Black spots on Meat
- 48- Meat discoloration.
- 49- Bitterness and viscous substances in chill Cheese.
- 50-Microbial spoilage of dried milks.

**Q.4) Give notes for the followings:**

- 1- Chemical composition of food as a factor effecting microbial spoilage of food.
- 2- Chilling injury of microorganism's cells.
- 3- Main effects of high temperatures on microorganisms.
- 4- Physical state of food as a factor effecting the destruction of microorganisms  
By irradiation.
- 5-a- The reasons for the general absence of bacteria in the incipient spoilage of fruits.  
b- Alarm water content has been suggested as a guide to the storage stability of dried Foods. Explain?
- 6- For Enterohemorrhagic E. coli (O157:H7) food poisoning give the followings: -  
1- Symptoms 2- Infective dose 3- Type of food poisoning 4- Incubation period.
- 7- Kinds and number of microorganisms in food as a factor effecting microbial spoilage of food.
- 8- How slow freezing cause cell injury and death of microorganisms.
- 9- Main effects of preservatives on microorganisms.
- 10-Types of microorganisms as factor effecting the destruction of microorganisms  
By irradiation.
- 11-a- More bacteria are found in egg yolk than egg white.  
b- The tasks to be accomplished by causal microorganisms to cause spoilage in egg.
- 12- For Clostridium perfringens food poisoning give the followings: -  
1- Symptoms 2- Infective dose 3- Type of food poisoning 4- Incubation & duration  
Period 5- Foods involved.

- 13- Water activity as a factor effecting microbial spoilage of food.
- 14-Age of microorganism's cells as a factor effecting survival of microorganisms under freezing conditions.
- 15- Main effects of radiations on microorganisms.
- 16-Age of microorganism's cell as factor effecting the destruction of microorganisms by irradiation.
- 17-a- The reasons that more bacteria are found in egg yolk than egg white.  
b- Most bacteria play no role in the spoilage of dried fruits.
- 18-- For Bacillus cereus food poisoning (Emetic syndrome) give the followings: -  
1- Symptoms 2- Infective dose 3- place of toxin production  
4- Heat & PH Stability of toxin 4- Incubation & duration period 5- Foods Involved.
- 19- Kind and number of microorganisms as factor effecting microbial spoilage of food.
- 20-Type of microorganism's cells as a factor effecting survival of microorganisms under freezing conditions.
- 21-Presence or absence of oxygen as factor effecting the destruction of microorganisms by irradiation.
- 22- For Bacillus cereus food poisoning (Diarrheal syndrome) give the followings: -  
1- Symptoms 2- Infective dose 3- place of toxin production  
4- Heat & PH Stability of toxin 4- Incubation & duration period 5- Foods Involved.
- 23- How does fast freezing cause cell injury & death of microorganisms.
- 24- Fat & Protein as a factor effecting heat resistance of microorganisms.
- 25- The types of microbial food poisoning (Briefly) with an example for each type.
- 26- For Botulism food poisoning give the followings: -  
1- Causative agent 2- Symptoms 3- Type of food poisoning 4- Foods Involved.
- 27- Oxidation-reduction potential as a factor effecting microbial spoilage of food.
- 28- Water activity as a factor effecting heat resistance of microorganisms.
- 29- For Vibrio parahaemolyticus food poisoning give the followings: -  
1-Symptoms 2- Incubation& Duration period 3- Type of food poisoning4- Foods Involved.
- 30- Indirect chilling injury of microorganisms.
- 31- The age of microorganism as a factor effecting heat resistance of microorganisms.
- 32- PH of food as a factor effecting microbial spoilage of foods.
- 33-Direct chilling injury of microorganisms.
- 34- The growth temperature as a factor effecting heat resistance of microorganisms.
- 35- Changes in odor & flavor of foods by microorganisms
- 36- The growth of types of microorganisms in foods in relation to redox.
- 37- PH of the environment as a factor effecting heat resistance of microorganisms.
- 38- Changes in color of foods by bacteria.
- 39- Sources of butter contamination.
- 40- Sources of meat contamination.
- 41- The rate of thawing as a factor effecting the percentage surviving under freezing.
- 42- a- Basis of food preservation by drying.

- b- The growth of types of microorganisms in relation with water activity.**
- 43- The condition of foods and the redox.**
  - 44- The symptoms for salmonella food poisoning.**
  - 45- Biological structure of food as a factor effecting microbial spoilage of food.**
  - 46- For Staphylococcus aureus food poisoning give (symptoms & food involved).**
  - 47- For Aflatoxin food poisoning give (Causative agent-Foods involved- Biological effects).**
  - 48- The parameters which determine the spoilage microflora of foods.**
  - 49- Compare between quick freezing and slow freezing from the standpoint of overall product quality and their effect on microorganisms.**
  - 50- The factors on which the speed at which microbes enter eggs is related to.**
  - 51- The sources of contamination of eggs.**
  - 52- Foods can be divided into 4 groups based on water activity levels. Give notes on the group which is the most microbiologically stable?**
  - 53- Infectious dose.**
  - 54- The Composition of food as a factor effecting on the survival of microorganisms under freezing conditions.**
  - 55- Sources of Fish contamination.**
  - 56- Sources of Milk contamination.**
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