Frequently asked questions:

- Q1. How are cheeses of different styles and flavors made?
- Ans. Different styles and flavors of cheese are the result of using milk from various mammals or with different butterfat contents, employing particular species of bacteria and moulds, and varying the length of aging and other processing treatments. Other factors include animal diet and the addition of flavouring agents such as herbs, spices, or wood smoke.
- Q2. How was the process of cheese-making discovered?
- Ans. The process of cheese making was discovered accidentally by storing milk in a container made from the stomach of an animal, resulting in the milk being turned to curd and whey by the rennet from the stomach.
- Q3. Name the different parameters on which cheeses are being classified?
- Ans. Cheeses are classified on the basis of the following parameters:
 - a) Type of milk employed
 - b) Fat content
 - c) Moisture content
 - d) Duration of ripening
 - e) Curing characteristics
 - f) Technology adopted during cheese making and temperature of curd processing
 - g) Denomination
- Q4. Classify cheese varieties on the basis of their fat content.
- Ans. On the basis of fat content on dry basis (FDB), cheeses are classified as;
 High fat (> 60% FDB), e.g., Robiola, Tillagio, etc., full fat (45-60% FDB), e.g.,
 Montasio, Rachera, cheddar etc, medium fat (25-45% FDB) e.g., Parmesan,
 Grana, etc, low fat (10-25% FDB) e.g., Emmenthal, skim (< 10% FDB), any

kind.

Q5. Define blue cheese and give some examples.

- Ans. Blue cheese is manufactured by inoculating a cheese with Penicillium roqueforti or Penicillium glaucum. This is done when the cheese is still in the form of loosely pressed curds, and may be further enhanced by piercing a ripening block of cheese with skewers in an atmosphere in which the mold is prevalent. The mold grows within the cheese as it ages. These cheeses have distinct blue veins which give them their name, and, often, assertive flavors, e.g., Roquefort, Gorgonzola, and Stilton.
- Q6. What do you understand by the cheeses having "Protected Denomination of Origin"?
- Ans. Cheeses produced in well defined geographical areas, employing local, loyal and constant practices, which derive their distinctive characteristics principally from the particular conditions of the production environment.
- Q7. What are the various milk pre-treatment processes involved in cheesemaking?
- Ans. Milk used for cheesemaking is normally standardized in terms of its composition, mainly fat and heat treated. In some cases, milk is also homogenized. An acid-producing starter culture is also added. It is also common to add colour (annatto or carotene) and calcium (in the form of CaCl2) to the milk and to adjust milk pH to a desired level, known as pre-acidification.

Heat treatment of milk is primarily intended to destroy the harmful microbial population and enzymes in raw milk to assure product safety and quality. Pasteurization is the most commonly used heat treatment (72°C with 15 s holding time). It not only destroys most of the bacteria present, including lactic-acid bacteria, but also inactivates many enzymes. A gentle heat treatment, known as thermization (60 to 65°C with 15 to 30 s holding time) may also be used advantageously before or after pasteurization.

- Q8. What are the different sources of enzymes to accomplish enzymatic coagulation?
- Ans. Enzymatic coagulation is accomplished by enzymes from animal (e.g., calf rennet, porcine pepsin), plant (e.g., Cynara Cardunculus from Cardom, Circium and Carlina Spp. from thistle), or microbial (e.g., Endothia parasitica ,Rhizomucor miehei) origin.
- Q9. What is cheddaring?
- Ans. Cheddaring is the process in which curd particles are allowed to fuse or "mat" together. The mats are then cut into slabs and stacked on top of each other. Physical properties and pH of the curd at this stage affect curd fusion and appearance of the finished cheese.
- Q10.What changes "stretching" imparts to the curd during mozzarella cheese production?
- Ans. This stretching step is unique to Mozzarella manufacturing. It imparts the characteristic oriented microstructure and related textural attributes of these cheeses. This transforms the curd into a cohesive, viscoelastic mass.
- Q11. What are "cured cheeses"?
- Ans. Cured cheeses are the cheeses ripened using the microflora of bacterial or fungal origin.
- Q12. Enlist different ripening agents in cheese?
- Ans. Following are the ripening agents in cheese:
- 1. Coagulant chymosin or other suitable proteinase.
- 2. Milk some indigenous enzymes contained in milk, e.g., plasmin.
- 3. Starter culture host enzymes released upon cell death and lysis.
- Secondary microflora microflora that perform some specific secondary function (e.g., propionic acid, bacteria, and yeasts and molds).

- 5. Exogenous enzymes proteinases, peptidases, and lipases added by cheesemakers to accelerate ripening.
- Q13. What are the various factors that are to be controlled during ripening?
- Ans. Temperature and humidity are the main two factors which are to be controlled during ripening process.
- Q14. What is paneer?
- Paneer is a south-asian variety of fresh, soft cheese obtained by acid and heat coagulation of milk. It has a smooth texture with slight acidic and mildly nutty flavor.
- Q15. What is homogenization?
- Ans. A mechanical process that breaks the fat globules into smaller droplets so that they stay suspended in the milk rather than separating out and floating to the top.