

2018**M.Sc. 4th Semester Examination****CHEMISTRY****PAPER—CEM-404****Subject Code—24***Full Marks : 40**Time : 2 Hours**The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.**Illustrate the answers wherever necessary.***Common (Physical + Organic + Inorganic)****Group-A**

Answer any four questions.

2×4

1. Write the average composition of whole cow milk.
2. Name one whey protein. What is double toned milk ?

(Turn Over)

3. What do you mean by UHT milk ?
4. Write the composition of sweetened condensed milk.
5. Name the components present in ice-cream and state their function.
6. Name the microbial strain used for Yogurt production.
7. With the help of flow chart show the steps of cheese making process.
8. What is the health benefit of using oil compared to Dalda ?

Group-B

Answer any *four* questions.

4×4

9. Why pasteurization is done immediately after homogenization of milk ? Give the time temperature conditions for HTST pasteurization of milk.
10. What is 'Maillard reaction' ? What is the working principle of fat determination of milk by 'Gerber method' ?
11. Give example of each hard, soft and semi hard cheese. What do you mean by 'bactofugation' ?

12. Write the condition of HTST milk pasteurization. How can you examine that milk is adulterated with additional water. What is MBR Test.
13. Name some size sorting devices used in a fruit processing unit.
14. Name some filter press used in fruit processing unit.
15. Write the objective of clarification and fining step in fruit juice manufacturing process.
16. Name some enzymes used in the process.

Group-C

Answer any *two* questions.

8×2

17. Write the difference between triglyceride and phospholipid. Name two essential fatty acids. What do you mean by 'HDL' and 'LDL'? Name the organic solvents usually used for extraction of oil from oil seeds. What is the object of degumming and deodorization steps during oil refining.

2+1+2+1+2

18. Write the full form of : BIS, AGMARK. Name some common adulterants used for milk and oil adulteration. State one testing method for each of the following : presence of vanaspoti in butter and argemone oil in mustard oil.

2+2+(2×2)

19. When oleic acid is hydrogenated, changes in physical, chemical as well as nutritional characteristics occur — Explain. What do you mean by transesterification of oil? What do you mean by peroxide value and what is its significance?

4+2+2

20. What are the chemical changes occur during ripening of fruits? Write the steps for manufacturing of clear fruit juice.

2+6
