

2023

FUNCTIONAL FOODS AND NUTRACEUTICALS

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

1. a) Define Nutraceuticals. Classify Nutraceuticals depending upon their natural source and major uses. 2+4+4
- b) Explain the different phytochemicals, their sources and role in the prevention of different types of diseases. 5+5
2. a) Write short notes on: 5+5
 - i) Health benefits of dietary fibre
 - ii) Antioxidants
- b) Discuss in detail about the market growth, scope and types of nutraceutical products available in the market. 2+4+4
3. a) Briefly explain the role of nutraceuticals in diabetes and cancer. 5+5
- b) Write the structure, sources and functions of (any two) 5+5
 - i) Glucosamine
 - ii) Octacosanol
 - iii) Lycopene
4. a) Write briefly about upstream, fermentation and downstream process of a fermentative process. 10
- b) Briefly discuss the operational strategies for fermentation? How control strategies are taken care in bioreactor? 10
5. a) Discuss microbial production of value added phytochemicals, polyphenolic compounds, alkaloids, terpenoids, prebiotics, poly amino acids etc in platform organisms with precursor feeding and *de novo* approach. 20
6. a) What are the adverse effects of nutraceuticals over dose? Briefly write mentioning for vitamins, mineral supplements, omega-3 fatty acids and other bioactive nutraceuticals. 20
7. a) Write briefly about associated toxicity of protein powder & soy protein isolate, infant formula, weight loss, sports and bodybuilding supplements. 20
