Roll No. ..... Total Printed Pages - 10

F - 1053

M.Sc. (Fourth Semester)
EXAMINATION, MAY-JUNE, 2022
(New Course)
BIOCHEMISTRY
Paper Second
(Nutraceuticals and Functional Foods)

Time : Three Hours] *[Maximum Marks : 80*

Note : Answer as per the instruction in each section.

(Section-A)

(Objective/Multiple Choice Questions)

(1 mark each)

Note- Attempt all questions.

Choose the most appropriate answer.

1. Grapes are considered functional foods because they contain these substances:

   (A) Proteins

   (B) Carbohydrates

   (C) Phytochemicals

   (D) None of the above

2. Omega-3 fatty acids are naturally high in salmon. Therefore, salmon can be classified as this types of food?

   (A) Fortified food

   (B) Functional food

   (C) Dietary supplement

   (D) Nutraceutical

3. Which of the following is defined as food, or parts of food, that provide medical or health benefits, including the prevention and treatment of disease?

   (A) Nutraceuticals

   (B) Functional foods

   (C) Dietary supplements

   (D) Pharmaceuticals

4. Which of the following would be considered components of Public Health Nutrition?

   (A) Dietary guidelines

   (B) Nutritional epidemiology

   (C) Fortification of foods with vitamins and minerals

   (D) All of the options listed are correct

5. Which of the following statement is correct?

   (A) The flavonoid class comprises flavonoids and isoflavonoids.

   (B) The digestibility and bioavailability of isoflavones in soya food products are not changed by processing.

   (C) β-Carotene and lycopene can both act as provitamin A.

   (D) Carotenoids and flavonoids both belong to the polypenol class.

6. Are GM foods a valuable tool with which to address global food security and climate change?

   (A) No, because they may cause cancer and have other unknown health effects thus making them unacceptable to consumers

   (B) Yes, because they can provide us with a more abundant and economical food supply for the world as well as continued improvement in nutritional quality

   (C) Yes, because they are cheaper than non-GM foods

   (D) No, because GM foods cannot adapt to the rate of climate change

7. Which active non-nutrient is common component of yogurt?

   (A) Fibre

   (B) Probiotics

   (C) Antioxidants

   (D) Phytochemicals

8. Which of the following enhances gut functioning?

   (A) Phytoestrogens

   (B) Probiotics

   (C) Antioxidants

   (D) Omega 3 fatty acids

9. Bread which has been fortified with vitamins and minerals, is classified as which type of food?

   (A) Organic

   (B) Genetically modified

   (C) Functional

   (D) Specialised

10. Alpha linoleic acid is written as 18 : 3, which means :

   (A) 18 carbon Atoms and double bond at C-3

   (B) 18 hydrogen atoms and 3 carbon atoms

   (C) 18 carbon atoms and double bonds

   (D) 18 single bonds and 3 double bonds

11. Which of the following is not PUFA?

(A) Linolenic acid

(B) Obleic acid

(C) Linoleic acid

(D) Arachidonic acid

12. Which of the following is present in flaxseed?

(A) Secoisolariciresinol, isolariciresinol and lariciresinol

(B) Metaresinol

(C) Pinoresinol

(D) All of the above

13. Carotenoids are not responsible for the following hue in plants -

(A) Yellow

(B) Orange

(C) Pink

(D) Red

14. Which of the following carotenoid is found in flamingo?

(A) Zeaxanthin

(B) Cryptoxanthin

(C) Astaxanthin

(D) Lutein

15. Which one of the following is the herbomineral drug?

(A) Melatonin

(B) Glutathione

(C) Shilajit

(D) Carnitine

16. Which class of molecules consists of two aromatic rings (A and B) joined by an oxygenated C-ring?

(A) Flavonoids

(B) Stilbenes

(C) Glucosinolates

(D) Phenolic acids

17. Lignans are part of which family of compounds?

(A) Carotenoids

(B) Polyphenols

(C) Phytosterols

(D) None of the above

18. As part of their molecular structures, hydrocarbon carotenoids contain :

(A) No hydroxyl groups

(B) 1 hydroxyl group

(C) 2 hydroxyl groups

(D) >2 hydroxyl groups

19. Which forms of flavonoids are also known as phyto-oestrogens?

    (A) Flavanols

    (B) Flavones

    (C) Isoflavones

    (D) Anthocyanidins

20. A flavonoid glycone is one that has :

    (A) An amino acid attached

    (B) A fatty acid attached

    (C) A sugar attached

    (D) None of the above

(Section- B)

(Very Short Answer Type Questions)

(2 marks each)

Note : Attempt all questions. Answer in 2-3 sentences.

Explain the following-

1. Functional food
2. Flavanols
3. Anthocyanidins

4. Phenolic acids
5. Carotenoids
6. Terpenoid
7. Prebiotic food
8. Diaryl heptanoid

(Section - C)

(Short Answer Type Questions)

(3 marks each)

Note : Attempt all questions. Answer in 75 words.

1. How can risk of heart attack reduced by nutrition?
2. How flavanoids help to reduce susceptibility to diseases?
3. Define properties and functions of nutracuticals present in flaxseed oil.
4. Write properties and functions of Glucosamine.
5. Write about nutracutical remedies for hypoglyemia.
6. Write short notes on treatment for cognitive decline.
7. What are inhibitors present in different foods describe with example?
8. What is RDA?

Section D

(Long Answer Type Questions)

(5 marks each)

Note : Attempt all questions. Answer in 150 words.

1. Explain different aspects of applicability of Nutracutical science.

OR

Write your view on "is nutracutical treatment better than other modes of treatment"

2. What do you think about if a person know properties and functions of various nutracticals presents in food and he/she takes these foods, than susceptibility for serious disorders like cancer, cardiovascular diseases etc. would be reduced for that person?

OR

Tabulate Flavanoids in following headings

(1) Class of Flavonoids

(2) Dietary Source

(3) Compound present

(4) Molecular Targets

(5) Biological Function

3. If a person suffering from liver disorders, which type of food and nutracutical treatment should he/she take to recover from disorder?

OR

Explain Nutraceuticals of Tea (Camellia sinensis) for Human Health.

4. Describe Health Benefits of Probiotic Bacteria as Nutraceuticals.

OR

What are different parameters to assessment of nutritional status and RDA?