



Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)

Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B

Coimbatore - 641 043, Tamil Nadu, India

Master's Degree Examination – June / July 2021

II Semester

Class: I PG
Major: FSMD / FSN/ Extension and Communication /
Biotechnology / Chemistry

Time : 3 Hours
Max Marks: 100

20MBCI01 IDC - Natural Antioxidants in Human Health and Disease

Part A

10 x 1 =10

Choose the Correct Answer

1. A free radical is: CO1K1
 - a. A cell that promotes health throughout the body.
 - b. A naturally or artificially occurring substance that causes disease if left unchecked.
 - c. A vitamin that is distributed at no charge at health food stores and natural-medicine clinics.
 - d. A nutrient that works to correct any imbalance in your body.
2. Antioxidant is: CO1K1
 - a. a substance which catalyzes the formation of freeradicals
 - b. a substance which neutralizes the formation of freeradicals
 - c. an oxygen free radical
 - d. none of the above
3. Ebselen and BHT are: CO2K2
 - a. Synthetic anticarcinogens
 - b. Naturally occurring compounds
 - c. Only found in plants
 - d. None of the above
4. The flavonoid quercetin is: CO2K1
 - a. Widely distributed in plant kingdom
 - b. A hydroxyl radical scavenger
 - c. A metal ion chelator
 - d. All the above
5. Oxidative stress (in humans) is not involved in the development of ----- CO3K2
 - a. Cancer
 - b. Parkinson's disease
 - c. Heart failure
 - d. All the above
6. The glutathione level depends on: CO4K1
 - a. Dietary sulphur
 - b. Blood oxygen level
 - c. Transition metal ions
 - d. Dietary carotenoids
8. Which of the following makes vitamin C an antioxidant? CO4K2
 - a. Its oxidizing potential
 - b. Its reducing potential
 - c. (a) & (b)
 - d. None of the above
9. Which action causes free radicals to form, potentially putting you at greater risk of heart disease? CO5K3
 - a. Eating pie à la mode
 - b. Breathing
 - c. Taking high amounts of a single antioxidant
 - d. All the above
10. Riboflavin can be essential for the inactivation of reactive oxygen species because of which enzyme being a flavoprotein CO5K2
 - a. glutathione peroxidase
 - b. glutathione reductase
 - c. glucose-6-phosphate dehydrogenase
 - d. superoxide dismutase

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. Classify the Free radicals based on its organic chemistry. CO1K2
(or)
- 11.b. Define Oxidative stress and explain its endogenous generation. CO1K1
- 12.a. Relate the oxidative response with Atherosclerosis disease. CO2K2
(or)
- 12.b. How uncontrolled oxidative stress can accelerate the aging process. CO2K1
- 13.a. Write a note on any three Class I Natural Antioxidants. CO3K3
(or)
- 13.b. Summarize the functions of Carotenoids as Singlet oxygen quenching. CO3K2
- 14.a. Justify the phyto components as antioxidants with two examples. CO4K5
(or)
- 14.b. List any six food sources of antioxidants and its composition. CO4K3
- 15.a. How the Antioxidants neutralizes the Free radical. CO5K1
(or)
- 15.b. Elaborate on Antioxidant supplements. CO5K2

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. Summarize the harmful effects of free radicals. CO1K3
(or)
- 16.b. Explain the mechanism of free radical attack on lipids and Nucleic acids. CO1K3
- 17.a. Describe the mechanism of oxidative stress induced in cancer disease. CO2K2
(or)
- 17.b. Explain the association of oxidative stress and neurodegenerative diseases associated with. CO2K3
- 18.a. Elaborate the functions of metal chelating antioxidants. CO3K2
(or)
- 18.b. Describe the mechanism of erythrorbic acid and ascorbic acid in free radical scavenging. CO3K2
- 19.a. Summarize the functions of some phyto components with antioxidant activity. CO4K3
(or)
- 19.b. Justify vitamins as Antioxidants. CO4K5
- 20.a. How is free radical antioxidants imbalance leading to degenerative diseases? CO5K2
(or)
- 20.b. Explain the effect of Antioxidants Supplementation on Aging and Longevity. CO5K3
