

Avinashilingam Institute for Home Science and Higher Education for Women
Coimbatore – 641 043

Master's Degree Examination – November 2017

Semester III

Class : II PG
Major : Food Science and Nutrition

Max. Marks : 60
Time : 3 Hours

Interdisciplinary Course – II
12MBC102 Antioxidants in Health and Diseases

Part A

10 x 1/2 = 5

Answer the following

Choose the correct answer

- Free radicals are electrically _____
a) Positively charged b) Negatively charged
c) Neutral d) Partially positive and negative
- Relative oxygen species is not generated by _____
a) Reduction of oxygen to water by cytochrome oxidase
b) Spontaneous oxidation of haemoglobin to methemoglobin
c) Phagocyte defence mechanisms
d) Flavoprotein oxidases in purine metabolism
- Prime contributor of atherosclerosis is the accumulation of _____
a) Monocytes b) mesophyll c) albumin d) cholestrol
- Which neurotransmitter receptors are commonly lost in Alzheimer's disease?
a) GABA b) Acetylcholine c) Dopamine d) Serotonin
- _____ antioxidant has the primary role as a chain breaking antioxidant in cell membrane
a) Vitamin E b) Glutathione c) Catalase d) Nitric oxide
- How does vitamin E act as an antioxidant?
a) It acts as a free radical scavenger
b) It stimulates the formation of NADPH by the pentose phosphate pathway
c) It activates the formation of reduced glutathione
d) It stimulates the synthesis of ascorbic acid
- Vitamin C deficiency is called as _____
a) Rickets b) Beri-beri c) Scurvy d) Night Blindness
- Alkaloids are _____ type of substances.
a) Acid b) Neutral c) Chemical d) Basic nitrogenous
- Long term degenerative diseases include _____
a) Coronary Heart Disease (CHD) b) Malnutrition
b) Mental disease d) Sickle cell anemia
- _____ part of the Spectrophotometer is adjusted to select the desired wavelength.
a) Light Source b) Filter c) Sample d) Photodetector

Part B

5 x 4 = 20

Answer ALL Questions

Answer should not exceed 200 words or one page

11. a) Discuss on the harmful effects of free radicals on nucleic acids and proteins.
(or)
b) Define and classify free radicals and explain in detail.
12. a) Outline how the atherosclerosis is associated with oxidative stress.
(or)
b) Discuss on the phytochemical analysis of phenols and outline its functions.
13. a) Write an account on chain breaking antioxidants with two examples.
(or)
b) Brief note on the role of antioxidants in erythroic acid and sulfites.
14. a) Discuss on how the activity of total antioxidant is estimated from plant extracts.
(or)
b) Explain the role and significance of vitamin as antioxidants.
15. a) Write a detailed note on antioxidant supplements in health and disease.
(or)
b) What is the role of antioxidants in neutralizing free radicals?

Part C

5 x 7 = 35

Answer ALL Questions

Answer should not exceed 600 words or three pages

16. a) Explain oxidative stress and discuss on the types of ROS.
(or)
b) Discuss on the endogenous generation and harmful effects of ROS, RNS and RSS.
17. a) Explain the phytochemical analysis for tannins and steroids.
(or)
b) Brief note on i) Process of aging and ii) Neurodegenerative diseases.
18. a) Describe in detail on the metal chelating antioxidants with their significance.
(or)
b) Explain the role of antioxidant in carotenoids, vitamin B complex and terpenoids.
19. a) Brief account on the natural oxidants polyphenols, flavanoids and anthocyanins.
(or)
b) Write a note on i) Small molecular weight antioxidant and ii) Food sources of antioxidant
20. a) Explain in detail on DPPH assay and write the significance of it.
(or)
c) Discuss on how free radical antioxidants will lead to degenerative diseases.
