Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Sessional II (Even) Semester Examination May 2025

Roll no.....

Name of the Course: B.Pharm
Semester: VIII Semester
Name of the Paper: Dietary Supplements and Nutraceuticals
Paper Code: BP-812ET
Time: 1.5 hours **Maximum Marks: 30**

Note:
(i) This question paper contains three sections
(ii) All the sections are compulsory

Section-A

MULTIPLE CHOICE QUESTION **10 X 1 = 10 MARKS**

S.No	CONTENTS	Cos
1.	Free radicals are mainly produced in cells during: A. Glycolysis B. Citric acid cycle C. Oxidative phosphorylation D. Fermentation	CO-03
2.	Which of the following is a functional food ingredient that helps in reducing oxidative stress? A. Sucrose B. Cholesterol C. Dietary fibers D. Trans fats	
3.	Free radicals cause damage to DNA by: A. Methylation B. Hydroxylation C. Strand breaks and base modification D. Glycosidic bond formation	
4.	An example of soluble dietary fiber is: A. Cellulose B. Lignin C. Pectin D. Hemicellulose	
5.	Major site of free radical generation in cells: A. Nucleus B. Endoplasmic reticulum C. Mitochondria D. Golgi apparatus	
6.	What is the primary role of Glutathione peroxidase in the cell? A. DNA synthesis	

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	B. Detoxification of hydrogen peroxide C. Energy production D. Protein folding	CO-04
7.	Which of the following is a synthetic antioxidant? A. Vitamin E B. α-Lipoic acid C. Butylated hydroxyanisole (BHA) D. Glutathione	
8.	Which of the following is a non-enzymatic endogenous antioxidant? A. Catalase B. Glutathione C. SOD D. Glutathione peroxidase	
9.	Which organ is particularly vulnerable to oxidative damage due to its high oxygen demand? A. Liver B. Skin C. Brain D. Intestines	
10.	Which antioxidant is known for being both water- and fat-soluble, enhancing its protective effect across cell compartments? A. Vitamin C B. Vitamin E C. α-Lipoic acid D. Melatonin	

Section B

Short Questions: Attempt any two **2x5 = 10**

S.No	QUESTIONS	CO's
1.	Describe the production of free radicals during cellular respiration.	CO-03
2.	Explain the free radical theory of ageing briefly.	CO-04
3.	Discuss the antioxidant role of Vitamin C and Vitamin E.	CO-04

Section C

Long questions: Attempt any one **1x10 = 10**

S.No	QUESTIONS	CO's
1.	Discuss the mechanisms by which free radicals damage lipids, proteins, carbohydrates, and nucleic acids.	CO-03
2.	Describe the role of free radicals in the pathogenesis of chronic diseases like cancer, atherosclerosis, and ischemia-reperfusion injury.	CO-04