UPES
End Semester Examination, May 2025

Course: Dietary Management in Advance Disease   **Semester : VI**
Program: Integrated B.Sc. M.Sc. Nutrition and Dietetics   **Duration : 3 Hours**
Course Code: HSND3012P   **Max. Marks : 100**

Instructions: Read all the questions carefully.

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M = 30 Marks)	Marks	COs
Q1	What do you understand by the term disease?	1.5	CO1
Q2	Infectious disease is an example of which etiological category of disease? a) multifactorial b) acquired c) genetic d) idiopathic	1.5	CO1

Q3	When researchers study the prevalence of atherosclerosis in developing countries and compare this to the prevalence in industrialized nations, this is an example of:
	   a) etiology
	   b) epidemiology
	   c) disease incidence
	   d) pathophysiology
		1.5	CO1

Q4	Mrs. J is meeting with her physician to discuss her recent diagnosis of breast cancer. As her physician outlines the probable response to therapy and how she expects Mrs. J to respond, the physician is actually discussing:
	   a) remission
	   b) prognosis
	   c) cure
	   d) diagnosis
		1.5	CO1

Q5	A patient reports feeling very tired and weak. This is best categorized as a:
	   a) Vital sign
	   b) Symptoms
	   c) Laboratory measurement
	   d) Clinical diagnosis
		1.5	CO1

Q6	Match the following: a) Atrophy 1. Abnormal accumulation of iron-containing pigment in tissues b) Hypertrophy 2. Decrease in cell size and function due to disuse or aging c) Metaplasia 3. Substitution of one mature cell type with another	1.5	CO2

	d) Dysplasia 4. Disordered growth and maturation of cells, often precancerous e) Hypoxia 5. Reduced oxygen supply to tissues f) Hemosiderin 6. Increase in cell size, typically in response to increased workload		
Q7	Jason, a 21-year-old college student, returned from a debate tournament where he was exposed to a teammate recovering from a stomach virus. Two days later, he developed nausea, vomiting, and mild fever. At the campus clinic, he was diagnosed with viral gastroenteritis and advised rest and fluids. Within 48 hours, his symptoms began to subside, and he was able to return to light activities. Identify the stages of infection in the following example.	1.5	CO2

Q8	Which lipoprotein is primarily responsible for transporting cholesterol away from tissues back to the liver?
	    a) VLDL
	    b) LDL
	    c) HDL
	    d) Chylomicrons
		1.5	CO2

Q9	Which of the following best explains how oxidized LDL contributes to atherogenesis? a) It increases HDL uptake in the liver b) It stimulates reverse cholesterol transport c) It enhances nitric oxide availability d) It promotes macrophage uptake and foam cell formation	1.5	CO2
Q10	Which laboratory parameter is most useful to monitor the progression of dyslipidemia-related endothelial dysfunction? a) Serum sodium b) C-reactive protein (CRP) c) Hemoglobin A1c d) Ferritin	1.5	CO2
Q11	What waist circumference indicates increased cardiovascular risk in women according to guidelines? a) >80 cm b) >85 cm c) >90 cm d) >92 cm	1.5	CO3
Q12	What is a likely reason why android obesity increases the risk of atherosclerosis more than gynoid obesity? a) It increases physical activity b) It is linked to insulin resistance	1.5	CO3

	c) It lowers HDL levels only d) It enhances estrogen production		
Q13	Which of the following best represents the correct progression from preclinical to clinical obesity? a) End-organ damage → Alterations of tissue → Excess adiposity → Symptoms b) Excess adiposity → Alterations in cells/tissues → Organ dysfunction → Clinical complications c) Limitations in daily activity → Symptoms → Detection → Anthropometric measurements d) Alterations of organ structure → Anthropometric changes → Review of systems → Preserved organ function	1.5	CO3
Q14	Which of the following best describes the condition of hyperleptinemia commonly seen in obesity? a) Elevated leptin levels with increased sensitivity to leptin b) Low leptin levels due to leptin deficiency c) Elevated leptin levels with leptin resistance d) Normal leptin levels with enhanced appetite suppression	1.5	CO3
Q15	Which of the following best characterizes Metabolically Healthy Obesity? a) Obesity with insulin resistance, hypertension, and dyslipidemia b) Obesity with preserved insulin sensitivity and normal metabolic profile c) Normal weight with high levels of visceral fat and metabolic abnormalities d) Obesity associated with increased inflammatory markers and fatty liver disease	1.5	CO3
Q16	Which of the following combinations correctly matches the acute and chronic complications of diabetes mellitus? a) Acute: Diabetic ketoacidosis; Chronic: Hypoglycemia, neuropathy b) Acute: Hyperosmolar hyperglycemic state (HHS); Chronic: Retinopathy, nephropathy c) Acute: Neuropathy, retinopathy; Chronic: Hyperglycemia, lactic acidosis d) Acute: Hypoglycemia, nephropathy; Chronic: Ketoacidosis, gangrene	1.5	CO3
Q17	A "fruity" breath odor in a patient with diabetic ketoacidosis is most likely due to the presence of: a) Acetone b) Lactic acid c) Ammonia d) Ethanol	1.5	CO4
Q18	Which of the following statements best reflects the long-term benefit of sustained glycemic control in individuals with type 2 diabetes mellitus?	1.5	CO4

	a) It completely prevents insulin resistance. b) It reduces progression of complications by improving endothelial function and reducing oxidative stress. c) It eliminates the need for lifestyle modifications. d) It reverses all nephropathic changes associated with diabetes.		
Q19	Which statement best describes carbohydrate counting for diabetes management? a) It counts only sugars b) It distributes carbs evenly across meals c) It eliminates carbohydrates entirely d) It emphasizes high glycemic foods	1.5	CO4
Q20	What is meant by the term "obesogenic environment"?	1.5	CO4

Section B
(4Qx5M=20 Marks)

Q1	Differentiate between healing by first intention and healing by second intention.	5	CO2
Q2	Define atherosclerosis. Explain how cigarette smoking contributes to the development and progression of atherosclerosis.	5	CO2
Q3	a. Compare and contrast white adipose tissue and brown adipose tissue. (2.5 marks) b. Identify two hormones produced by adipose tissue and explain their impact on energy balance and fat storage. (2.5 marks)	5	CO2
Q4	Illustrate the role of insulin in cellular uptake of glucose.	5	CO3

Section C
(2Qx15M=30 Marks)

Q1	a) Define diabetes mellitus. List down the common clinical manifestations of T2DM. (4 marks) b) What are the acute consequences of insulin deficiency in the body. (7 marks) c) Describe three ways diabetes can be diagnosed. (4 marks)	15	CO3
Q2	Mr. A, a 38-year-old IT professional, visits a nutrition and wellness centre seeking advice on improving his health. He has a BMI of 31.8 kg/m² and a waist circumference of 102 cm. He spends most of his day seated at his desk, skips meals often, and tends to consume processed snacks and sugary beverages during work. His recent lab reports indicate elevated LDL cholesterol and mildly elevated blood pressure. He experiences low energy levels and has noticed increasing difficulty in performing daily tasks like climbing stairs. His father had a history of type 2 diabetes and coronary artery disease. a) Based on Mr. A's metabolic profile, identify the obesity class and explain the associated health risks. (3 marks) b) List five environmental or behavioral contributors to Mr. A's weight gain. Choose one and describe how you would approach it in your nutrition counseling session. (5 marks) c) Select two of Mr. A's lifestyle habits and outline evidence-based dietary strategies to modify them. (4 marks)	15	CO4

	d) Describe three different methods to assess adiposity in Mr. A's case and discuss their limitations. (3 marks)		
	Section D **(2Qx10M=20 Marks)**		
Q1	Discuss the major factors influencing mean arterial blood pressure. Elaborate on the role of RAA system in the regulation of MAP.	10	CO3
Q2	Illustrate the key stages of inflammation.	10	CO4