


Name:			
Enrolment No:			
UPES End Semester Examination, December 2024			
Course: Sports Nutrition and management		Semester : V	
Program: Integrated BSc MSc Nutrition and Dietetics		Duration : 3 Hours	
Course Code: HSND3017		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
Q 1	What is the main form of energy that cells use?	1.5	CO1
Q 2	The predominant fuel for a 2-hour marathon is _____. <ul style="list-style-type: none">) protein) fat) carbohydrate) water 	1.5	CO4
Q 3	How do fatty acids enter the citric acid cycle?	1.5	CO2
Q 4	Glycolysis begins with _____ and ends with _____. <ul style="list-style-type: none"> a) pyruvate; water b) pyruvate; glucose c) glucose; pyruvate d) pyruvate; acetyl-CoA 	1.5	CO1
Q 5	State one difference between aerobic and anaerobic metabolism of glucose.	1.5	CO3
Q 6	What is the role of coenzymes in electron transport chain?	1.5	CO2
Q 7	Is it possible for the body to convert fat into glucose? Why or why not?	1.5	CO2
Q 8	To use amino acids as a fuel, what must happen to the nitrogen attached to the amino acid?	1.5	CO2
Q 9	When muscle tissue is exercising under anaerobic conditions, the production of _____ is important because it assures a continuous supply of NAD. <ul style="list-style-type: none"> a) glucose-6-phosphate b) pyruvate c) lactic acid d) glycogen 	1.5	CO3
Q 10	Why is creatine so important for fueling high-intensity, short-duration exercise?	1.5	CO3
Q 11	What is an ergogenic aid?	1.5	CO2
Q 12	What do you understand by the term METs?	1.5	CO2

Q 13	During periods of starvation, the body uses protein as a fuel source for the brain and central nervous system in a pathway called gluconeogenesis. a. true b. false	1.5	CO2
Q 14	Which of the following athletes would <i>not</i> benefit from carbohydrate loading? a) marathon runner b) long-distance cyclist c) triathlete d) football player	1.5	CO4
Q 15	Hyponatremia is a condition that can occur when athletes drink too much _____. a) alcohol b) water c) sports drinks d) milk	1.5	CO3
Q 16	What is the primary nutrient that should be consumed in the pre-exercise meal?	1.5	CO2
Q 17	How should athletes determine if they are dehydrated?	1.5	CO3
Q 18	Identify one key difference between the intensity of aerobic and resistance exercises, providing an example for each.	1.5	CO3
Q 19	State one difference between Type I and Type II muscle fibers.	1.5	CO3
Q 20	Match the definitions on the right with the terms on the left. a. beta-oxidation 1. breakdown of glucose to pyruvate b. ketosis 2. breakdown of fat to 2-carbon units called acetyl-CoA c. electron transport chain 3. synthesis of glucose from non-CHO sources d. gluconeogenesis 4. formation of excess ketone bodies e. glycolysis 5. electrons transferred back and forth to make ATP	1.5	CO4
Section B (4Qx5M=20 Marks)			
Q 1	Explain the benefits of physical activity.	5	CO1
Q 2	Describe the fluid needs of athletes and how to avoid dehydration and hyponatremia.	5	CO2
Q 3	a. What is progressive overload principle? (1.5 marks) b. Discuss the conditions that must exist in the body to promote the formation of ketones. (3.5 marks)	5	CO3
Q 4	What adaptations occur that help slow the breakdown of lean body mass during prolonged fasting?	5	CO4
Section C (2Qx15M=30 Marks)			
Q 1	a. Discuss the relationship between exercise intensity and blood lactate levels in both untrained individuals and endurance athletes. (7.5 marks)	15	CO4

	b. How do aerobic training adaptations alter the lactate threshold, in endurance athletes and the significance of the Cori cycle in energy metabolism? (7.5 marks)		
Q 2	a. Discuss the relationship between oxygen consumption during exercise, oxygen deficit, and recovery oxygen consumption (EPOC). (7.5 marks) b. How does the intensity and duration of exercise influence these factors, and what are the differences in recovery between trained and untrained individuals? (7.5 marks)	15	CO3
Section D (2Qx10M=20 Marks)			
Q 1	Describe what happens to excess amounts of ingested fat, protein, and carbohydrates.	10	CO3
Q 2	a. Describe the physiological adaptations of the heart and lungs that occur during cardiorespiratory conditioning. (5 marks) b. Discuss how the body utilizes fat for energy, based on the duration and intensity of physical activity and the role of training in enhancing fat utilization. (5 marks)	10	CO4