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	The energy currency in the body is _____ . a) NAD b) FAD c) TCA d) ATP	1.5	CO1
Q 2	What amount of time should be devoted to physical activity to reduce the risk of chronic diseases?	1.5	CO3
Q 3	The net energy production of ATP via glycolysis is _____. a) 1 ADP b) 2 ATP c) 4 FADH d) 2 GTP e) none of the above	1.5	CO2
Q 4	Glycolysis is a biochemical pathway that _____. a) breaks down glucose b) generates energy c) takes place in the cytosol d) all of the above	1.5	CO1
Q 5	What fuels anaerobic exercise?	1.5	CO3
Q 6	What role do B vitamins play in energy metabolism?	1.5	CO2
Q 7	Can fat be used to synthesize glucose? Why or why not?	1.5	CO2
Q 8	In the first few hours of a fast, what is the primary fuel for the body?	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. 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 term is used to describe the increase in muscle size and strength because of repeated work? a) Atrophy b) Hypertrophy c) Osteoporosis d) Muscular dystrophy	**1.5**	**CO2**
Q 13	What do you understand by METs?	**1.5**	**CO2**
Q 14	Which of the following athletes would *not* benefit from carbohydrate loading? a) marathon runner b) long-distance cyclist c) triathlete d) football player	**1.5**	**CO4**
Q 15	What is hyponatremia?	**1.5**	**CO3**
Q 16	What is the purpose of the pre-exercise meal?	**1.5**	**CO2**
Q 17	How much fluid should an athlete drink after exercise?	**1.5**	**CO3**
Q 18	Identify one key difference between the intensity of cardiorespiratory exercises and strength training 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	Illustrate the pathways used by glucose, fatty acids and amino acids to yield energy.	**5**	**CO1**
Q 2	a. Discuss Cori cycle. b. Describe how the body manage and utilize excess dietary protein.	**5**	**CO2**
Q 3	Differentiate between moderate and vigorous physical activity. Explain how high-carbohydrate diets enhance endurance during activity.	**5**	**CO3**
Q 4	a. What is progressive overload principle? (1.5 marks) b. Describe carbohydrate loading and explain how consuming carbohydrates during endurance activities benefits athletes. (3.5 marks)	**5**	**CO4**
Section C **(2Qx15M=30 Marks)**			
Q 1	a. Discuss the relationship between oxygen consumption during exercise, oxygen deficit, and recovery oxygen consumption (EPOC). (7.5 marks)	**15**	**CO4**

	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)		
Q 2	a. Discuss the relationship between exercise intensity and blood lactate levels in both untrained individuals and endurance athletes. (7.5 marks) 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)	**15**	**CO3**
Section D **(2Qx10M=20 Marks)**			
Q 1	Discuss how carbohydrates, fats, and proteins are utilized for energy during prolonged fasting.	**10**	**CO2**
Q 2	a. What is VO_2 max? (2.5 marks) b. Describe the physiological adaptations of the heart and lungs that occur during cardiorespiratory conditioning. Include changes in cardiac output, heart rate, and breathing efficiency. (7.5 marks)	**10**	**CO4**