

PARUL UNIVERSITY
PARUL INSTITUTE OF APPLIED SCIENCES
REGULAR INTERNAL EXAMINATION, JAN 2022-23
B.Sc. SEMESTER 4
Subject Name: Metabolism II
Subject Code: 11103218

Date:20/01/2023

Time: 1hr 30mins

Maximum Marks: 40

Instructions:

1. All questions are compulsory and options are given in first and second question only.
2. Numbers to the right of question indicate the marks of respective question.

Q.1	Attempt <u>any one</u> question of the following.	(08)	CO	PO	PSO	Blooms Taxonomy
1.	What is oxidative phosphorylation and describe the process involved in production of ATP through oxidative phosphorylation?	08	2	PO1		Remembering
2.	Explain Malate- Oxaloacetate-Aspartate shuttle?	08	1	PO1		Analyzing
Q.2	Attempt <u>any three</u> questions of the following.	(12)	CO	PO	PSO	Blooms Taxonomy
1.	What is BMR and what are the factors affecting it?	04	3	PO2		Evaluating
2.	Explain the classification of carbohydrates with examples?	04	3	PO2		Evaluating
3.	Describe the structure and function of mitochondria?	04	2	PO1		Evaluating
4.	What are fibers and how they are important for health?	04	3	PO2		Applying
5.	What is nitrogen balance and its different types?	04	3	PO1		Evaluating
Q.3	Do as directed. Attempt <u>all five</u> questions.	(05)	CO	PO	PSO	Blooms Taxonomy
1.	What is P:O ratio and what is the P:O ratio of NADH+H and FADH ₂ ?	01	1	PO1		Creating
2.	What is binding chain mechanism?	01	1	PO1		Remembering
3.	Give four inhibitors of oxidative phosphorylation?	01	2	PO2		Understanding
4.	Why ATP considered as universal energy currency?	01	2	PO1		Evaluating
5.	Which theory explains the functioning of ATP synthase?	01	1	PO1		Applying
Q.4	Write correct option in your answer sheet for following <u>fifteen</u> multiple choice Questions.	(15)	CO	PO	PSO	Blooms Taxonomy
1.	Anabolism and catabolism are chemically linked in the form of _____	1		PO1		Creating
	(A) ADP	(B) ATP				
	(C) Phosphodiester linkage	(D) ASP				
2.	Which one of the following is the one having highest redox potential?	1		PO1		Remembering
	(A) Ubiquinone	(B) O ₂				
	(C) FMN	(D) NAD				

3.	What is the total yield of ATP from complete oxidation of one molecule of glucose?	1	PO1		Evaluating
	(A) 38	(B) 2			
	(C) 8	(D) 40			
4.	Enzymes are _____	3	PO2		Remembering
	(A) lipids	(B) proteins			
	(C) polysaccharides	(D) lipoproteins			
5.	What is the full form of ATP?	1	PO1		Remembering
	(A) Adenine triphosphatase	(B) Adenyl triphosphatase			
	(C) Adenosine triphosphate	(D) Adreno triphosphate			
6.	Basal metabolic rate shall be measured while a person is	3	PO2		Analyzing
	(A) jogging	(B) going to work			
	(C) resting	(D) sweating			
7.	Animals store carbohydrates mainly in the form of	3	PO1		Analyzing
	(A) cellulose	(B) starch			
	(C) galactose	(D) glycogen			
8.	Essential fatty acids are predominantly present in	3	PO1		Analyzing
	(A) Vegetable oil	(B) Sunflower oil			
	(C) Fish oil	(D) All of above			
9.	Basal metabolic rate measures	3	PO2		Applying
	(A) how fast chemical reactions occur	(B) the time lapse between eating and passing stool			
	(C) number of enzymes required	(D) number of active sites			
10.	One of the simplest carbohydrates is	3	PO1		Understanding
	(A) maltose	(B) fructose			
	(C) sugar glucose	(D) galactose			
11.	Amino acids are composed of	3	PO2		Applying
	(A) carbon, oxygen and sulfur	(B) carbon, oxygen, hydrogen and nitrogen			
	(C) carbon, oxygen and hydrogen	(D) carbon, nitrogen and oxygen			
12.	The term used to describe all of the chemical reactions occurring inside any organism	1	PO1		Understanding
	(A) condensation	(B) oxidation			
	(C) polymerization	(D) metabolism			
13.	To keep the heart running	1	PO1		Applying
	(A) energy is required	(B) no energy is required			
	(C) resting position is required	(D) solar energy is required			
14.	The enzyme that makes ATP by chemiosmosis is	1	PO2		Understanding
	(A) ATP dehydrogenase	(B) Gyrase			
	(C) ATP synthase	(D) dehydrogenase			
15.	The example of the soluble fibers includes all except	3	PO1		Understanding
	(A) Pectin	(B) Gums			
	(C) Mucilage	(D) Cellulose			