PARUL UNIVERSITY

PARUL INSTITUTE OF APPLIED SCIENCES

MID SEMESTER INTERNAL EXAMINATION, Summer 2019

B. Sc. Semester II

Subject: Biochemistry

Paper Code: 11103152 **Title of the paper: Metabolism -I**

Date: 27 /02/2019 **Time: 2:30pm-4:00pm**

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 any one question of the following. (i) Explain steps of glycolysis in detail with regulation. (ii) Describe Denovo pathway for synthesis of Purine nucleotide.	**(08)**
Q. 2	Attempt any three questions of the following. (i) Draw TCA cycle. (ii) Explain HMP shunt in detail. (iii) Describe regulation of Gluconeogenesis. (iv) How IMP is converted into GMP and AMP? (v) Discuss Salvage pathway of pyrimidine nucleotide.	**(12)**
Q. 3	Do as directed. Attempt all five questions. (i) Draw structure of Thymine. (ii)Define ETC. (iii) What do you mean by inhibitors (iv) Where glyoxylate pathway occurs? (v) Name end products of pyrimidine nucleotide.	**(05)**
Q. 4	Write correct option in your answer sheet for following 15 multiple choice questions.	**(15)**

MCQ 1	Which of the following enzyme catalyzes the first step of glycolysis?			
	(A)	Hexokinase	(B)	Pyruvate Kinase
	(C)	Glucokinase	(D)	Phosphofructokinase-1
MCQ 2	Cleavage of fructose 1,6-biophosphate yields_____.			
	(A)	Two aldoses	(B)	An aldose and a ketose
	(C)	Two ketoses	(D)	Only a ketose
MCQ 3	High concentration of glucose 6-phosphate is inhibitory to_____.			
	(A)	Hexokinase	(B)	Pyruvate Kinase
	(C)	Glucokinase	(D)	Phosphofructokinase-1
MCQ 4	Oxaloacetate is reduced to malate by_____.			
	(A)	Pyruvate carboxylase	(B)	Malate dehydrogenase

	(C)	Pyruvate Kinase	(D)	Phosphofructokinase-1
MCQ 5	Gluconeogenesis involves conversion of _____.			
	(A)	Glucose to pyruvate	(B)	Pyruvate to glucose
	(C)	PEP to glucose	(D)	Pyruvate to fructose
MCQ 6	The key regulatory enzyme of HMP pathway is_____.			
	(A)	Glucose-6-P dehydrogenase	(B)	Transaldolase
	(C)	Transketolase	(D)	Gluconolactone hydrolase
MCQ 7	The major products of the pentose phosphate pathway are_____.			
	(A)	Ribulose and NADPH	(B)	Ribulose and ATP
	(C)	Ribose and NADH	(D)	Ribose and NAD
MCQ 8	Which of the following ETC components accepts only one electron?			
	(A)	Oxygen	(B)	Cytochrome b
	(C)	FAD	(D)	FMN
MCQ 9	Which statement best describes Xanthine?			
	(A)	Direct precursor of guanine	(B)	Oxidized to form Uric acid
	(C)	Covalently binds to alloprinol	(D)	Oxidized to form hypoxanthaine
MCQ 10	Purine nucleotide biosynthesis can be inhibited by which of the following?			
	(A)	Guanosine triphosphate	(B)	Adenosine mono phosphate
	(C)	Uridine mono phophate	(D)	Inosinediphosphate
MCQ 11	Which of the following is a required substrate for purine biosynthesis?			
	(A)	PRPP	(B)	5-methyl thymidine
	(C)	Ara-C	(D)	Ribose phosphate
MCQ 12	Which of the following is an analogue of hypoxanthanie?			
	(A)	Ara C	(B)	Allopurinol
	(C)	Ribose phosphate	(D)	PRPP
MCQ 13	The conversion of IMP to_____.			
	(A)	GDP requires ribonucleotidereductase	(B)	GMP requires glutamine
	(C)	GMP requires GMP kinase	(D)	AMP requires UMP
MCQ 14	The first intermediate with a complete purine ring is_____.			
	(A)	Formate	(B)	Inosinate
	(C)	Aspartate	(D)	Glycine
MCQ 15	Which of the following is an important precursor in pyrimidine pathway?			
	(A)	Glycine	(B)	Aspartate
	(C)	Glutamine	(D)	Leucine

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