Total No. of Questions: 3 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Pharmacy
End Sem Examination May-2024
PY3CO07 Biochemistry

Programme: B. Pharm. Branch/Specialisation: Pharmacy

Duration: 3 Hrs. **Maximum Marks: 75**

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1	i.	Define monosaccharide with example.	**2**
	ii.	What are endergonic and exergonic reactions?	**2**
	iii.	Enlist any two enzymes of glycolysis.	**2**
	iv.	Define diabetes mellitus. Which hormones regulate blood glucose levels?	**2**
	v.	What is the significance of cholesterol?	**2**
	vi.	Give examples of any two catecholamines and their significance.	**2**
	vii.	Enlist the pathways for biosynthesis of purines and pyrimidine nucleotides.	**2**
	viii.	Write structure of DNA and its functions.	**2**
	ix.	Define enzymes with examples.	**2**
	x.	What are factors affecting enzyme activity? (any four)	**2**
Q.2		Attempt any two:	
	i.	Explain carbohydrates with classification, chemical nature and biological role.	**10**
	ii.	Give detailed note on pathway, energetics and significance of Citric Acid Cycle. (Kreb Cycle)	**10**
	iii.	(a) Write a note on relationship between free energy, enthalpy and entropy.	**5**
		(b) Write a note on ETC and its mechanism.	**5**
Q.3		Attempt any seven: Two questions from each section is compulsory.	
		Section - A	
	i.	Give details about beta oxidation of fatty acid. (Palmitic acid)	**5**

P.T.O.

	ii.	Explain urea cycle.	**5**
	iii.	Write a short note on disorders of lipid metabolism.	**5**
		Section - B	
	iv.	Write a short note on catabolism of purine nucleotides. What is hyperuricemia and gout?	**5**
	v.	Write differences between RNA and DNA.	**5**
	vi.	Explain transcription. (RNA synthesis)	**5**
		Section - C	
	vii.	Define enzymes. Give IUB classification of enzymes.	**5**
	viii.	Explain enzyme kinetics.	**5**
	ix.	Describe therapeutic and diagnostic applications of enzymes.	**5**

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. Marksing Scheme

Biochemistry (T) - PY3CO07 (T)

Q.1 i) Define monosaccharide with example. **2**
Define - 1 Marks
Example - 1 Marks

ii) What are endergonic and exergonic reactions? **2**
Endergonic reaction - 1 Marks
Exergonic reaction - 1 Marks

iii) Enlist any two enzymes of glycolysis. **2**
- 1 Marks each

iv) Define diabetes mellitus. Which hormones regulate blood glucose levels? **2**
Definition - 1 Marks
Hormone example - 1 Marks

v) What is the significance of cholesterol? **2**
Explanation - 2 Marks

vi) Give examples of any two catecholamines and their significance. **2**
Examples - 1 Marks
Significance - 1 Marks

vii) Enlist the pathways for biosynthesis of purines and pyrimidine nucleotides. **2**
Denovo synthesis - 1 Marks
Salvage Pathway - 1 Marks

viii) Write structure of DNA and its functions. **2**
Structure - 1 Marks
Function - 1 Marks

ix) Define enzymes with examples. **2**
Definition - 1 Marks
Example - 1 Marks

x) What are factors affecting enzyme activity? (any four) **2**
Temperature, pH , enzyme concentration, substrate concentration , light , time - 0.5 Marks s each factor

Q.2 Attempt any two: Attempt any two:

i. Explain carbohydrates with classification ,chemical nature and biological role. **10**
Definition – 1 Marks
Classification with structures – 5 Marks
Chemical nature – 2 Marks
Biological role - 2 Marks

ii. Give detailed note on pathway, energetics and significance of Citric Acid Cycle. (Kreb Cycle) **10**
Kreb cycle pathway – 7 Marks
Energetics – 2 Marks
Significance – 1 Marks

iii. (a) Write a note on relationship between free energy,enthalpy and entropy. **5**
Free energy equation - 3 Marks
Explaination of endergonic and exergonic reaction - 2 Marks

(b) Write a note on ETC and its mechanism. **5**

Q.3 Attempt any seven: Two questions from each section is compulsory.

Section - A

i. Give details about beta oxidation of fatty acid(palmitic acid) **5**
ii. Explain urea cycle. **5**
iii. Write a short note on disorders of lipid metabolism. **5**

Section - B

iv. Write a short note on catabolism of purine nucleotides. What is hyperuricemia and gout? **5**
Catabolism steps – 2 Marks
Hyperuricemia – 1 Marks
Gout – 2 Marks .
v. Write differences between RNA and DNA. **5**
vi. Explain transcription. (RNA synthesis) **5**
Steps – 3 Marks
Explanation - 2 Marks

Section - C

vii. Define enzymes. Give IUB classification of enzymes. **5**
Definition - 1 Marks
Classification - 4 Marks
viii. Explain enzyme kinetics. **5**
Factors affecting enzyme action - 1 Marks
Lineweaver burke plot – 2 Marks

Michaelis plot – 2 Marks

ix. Describe therapeutic and diagnostic applications of enzymes. **5**

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