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AW–1700

B.Sc. Part-II (Semester-III) Examination

BIOCHEMISTRY

(Intermediary Metabolism)

Time : Three Hours] [Maximum Marks : 80

Note :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw diagrams wherever necessary.

1. (A) Fill in the blanks :

(i) _____ is a first complex of ETC. ½

(ii) Carbohydrate is stored in form of _____ in liver. ½

(iii) _____ cycle is also termed as common metabolic pool. ½

(iv) _____ is one of bile pigments. ½

(B) Choose the correct alternative :

(i) Lock and Key theory was proposed by : ½

(a) Leuwenhoek (b) Koshland

(c) Darvin (d) Emil Fischer

(ii) End product of aerobic glycolysis : ½

(a) Acetyl CoA (b) Lactate

(c) Pyruvate (d) CO_2 and H_2O

(iii) Glucose-6 phosphate is an allosteric inhibitor of : ½

(a) Glucokinase (b) Hexokinase

(c) Phosphohexoisomerase (d) None of the above

(iv) The following is required as reductant in fatty acid synthesis : ½

(a) NADH (b) NADPH

(c) FMN (d) FAD

(C) Answer in **ONE** sentence :

(i) Inhibitor 1

(ii) Glycolysis 1

(iii) Coenzyme 1

(iv) Km 1

2. Answer the following :

(a) Oxidative phase of HMP shunt 4

(b) Mechanism of oxidative phosphorylation 4

(c) Investment phase of glycolysis. 4

OR

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	(p)	Glyoxalate bypass	4
	(q)	Glycogen synthesis in Liver	4
	(r)	CO_2 generating steps of Kreb's cycle.	4
3.	(a)	Describe biosynthesis of saturated fatty acids.	4
	(b)	Explain β-oxidation of fatty acids.	4
	(c)	Explain in brief hydrolysis of triacylglycerols.	4
		OR	
	(p)	Describe in brief metabolism of ketone bodies.	4
	(q)	Discuss in brief biosynthesis of unsaturated fatty acids.	4
	(r)	Describe transport of fatty acids into mitochondrial matrix.	4
4.		Describe in detail regulation of cholesterol metabolism.	12
		OR	
		Describe in detail biosynthesis of cephalin and lecithin.	12
5.	(a)	Describe urea cycle in brief.	4
	(b)	Describe biosynthesis of cysteine.	4
	(c)	Describe biosynthesis of serine.	4
		OR	
	(p)	Describe transamination and decarboxylation of amino acids.	4
	(q)	Describe biosynthesis of Tyrosine.	4
	(r)	Explain catabolism of Methionine.	4
6.	(a)	Discuss the sources of atoms in purines.	4
	(b)	Describe in brief biosynthesis of adenine.	4
	(c)	Describe in brief regulation of purine biosynthesis.	4
		OR	
	(p)	Describe sources of atoms in pyrimidines.	4
	(q)	Explain in brief regulation of pyrimidine biosynthesis.	4
	(r)	Describe in brief biosynthesis of guanine.	4
7.		Explain in detail degradation of heme pigment.	12
		OR	
		Describe in detail production of Bilirubin bile pigment.	12

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