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1905E721

Candidate's Seat No :

B.Sc. (Sem.-V) Examination

302 CC Biochemistry

Time : 3 Hours] **May-2017** **[Max. Marks : 70**

Q.1 (a) Explain Watson –Crick proposed model of DNA. (with diagram) (6)

(b) Explain role of DNA polymerase- I , III in replication . (8)

OR

Q.1 (a) Supercoiling of DNA – types and importance - explain in detail. (8)

(b) Write a note on Griffith's experiment and give its significance . (6)

Q.2 (a) Write a note on transcription –Briefly with diagram . (7)

(b) Write a note on Physical and chemical (2 each) mutagenic agents . (7)

OR

Q.2 Explain in detail the – GENETIC CODE and its characteristics (14)

Q.3 Explain any Two (14)

(a) Role of t-RNA as an adapter.

(b) Post translational modification .

(c) Initiation of translation.

(d) Lac-Operon as gene regulation.

Q.4 (a) Short note on Vectors (types and examples). (7)

(b) Explain splicing and insertion of DNA. (7)

OR

Q.4 Explain / short note on 1. Recombinant DNA technology 2. Restriction enzymes . (14)

Q.5 Define/Explain briefly following: (14)

1. Hybridization
2. Semi-Conservative replication
3. hyperchromicity
4. Inducer
5. transcription factor
6. z- DNA
7. DNA sequencing

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1805E678

Candidate's Seat No

B.Sc. (Sem.-V) Examination

301 CC Biochemistry

Time : 3 Hours] **May-2017** **[Max. Marks : 70**

Q1.a)	Discuss Glycolysis with reference to its reactions & regulation.	(12)
b)	Define Gluconeogenesis. List two conditions when it occurs.	(02)
	OR	
Q1.a)	Discuss Synthesis of Glycogen in detail with its regulation. Discuss the role of Glycogenin.	(12)
b)	Draw Cori's cycle.	(02)
Q2.a)	Discuss Transamination of amino acids.	(07)
b)	Describe the synthesis of Creatine.	(07)
	OR	
Q2.a)	Discuss Urea cycle in detail with reference to its reactions, regulation & localization.	(14)
Q3.a)	State the differences between Fatty acid biosynthesis & degradation	(07)
b)	Discuss beta oxidation of fatty acids in detail.	(07)
	OR	
Q3.a)	Discuss the role of glucagon and insulin on fuel metabolism.	(08)
b)	List various ketone bodies & discuss their breakdown	(06)
Q4.a)	Discuss in detail TCA Cycle with reference to the reaction catalyzed & regulation.	(14)
	OR	
Q4.a)	Discuss Glycerol Phosphate shuttle.	(04)
b)	Describe complex I and IV of Electron Transport chain with schematic diagrams.	(06)
c)	Chemiosmotic Hypothesis for oxidative phosphorylation	(04)
Q5.	Answer to the point:	(14)
1)	Name the enzymes of Pyruvate Dehydrogenase complex in mammals.	(02)
2)	What is the effect of DNP on oxidative phosphorylation & why?	(02)
3)	What is the importance of Glutamate & Glutamine in amino acid catabolism.	(02)
4)	List the two most important products formed in Pentose phosphate pathway.	(01)
5)	Name the key enzyme in Glycogen breakdown & write its reaction.	(02)
6)	Name two in-born errors of amino acid catabolism; name the defective enzymes in them.	(02)
7)	What is the protein metabolic end product in monkeys, tortoise, fish and ameba?	(02)
8)	Name the defective enzymes in Gaucher's disease and Tay-Sach's syndrome.	(01)

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2205E798

Candidate's Seat No :

B.Sc. (Sem.-V) Examination
304 CC Biochemistry
May-2017

Time : 3 Hours] **[Max. Marks : 70**

1.	(a)	Write a note on the cell wall of Gram Negative Bacteria	(7)
	(b)	Discuss the role of microorganisms in recycling of elements.	(7)
		OR	
1.	(a)	Discuss Sporulation in bacterial cells.	(9)
	(b)	Write a note on Metachromatic Granules.	(5)
2.	(a)	Discuss the Physical & Chemical theories behind staining.	(4)
	(b)	Write a note on : Mycoplasmas	(7)
	(c)	What are Leucocompounds?	(3)
		OR	
2.	(a)	Write a note on Acid fast staining & Negative Staining	(10)
	(b)	Briefly explain Fixation and its importance.	(4)
3.	(a)	Write a note on Dietary Fiber	(7)
	(b)	Discuss the transport of Lipids in our body.	(7)
		OR	
3.	(a)	Discuss the role of Carbohydrates	(6)
	(b)	Write a brief note on : (1) PUFA (2) Nitrogen Balance	(8)
4.	(a)	Discuss any **TWO**: 1.Nutritional value of Milk 2.Vegetarianism 3. BMR and factors affecting it. 4.Energy balance	(14)

5.	**Answer the following briefly:**	**14**
a.	Define Protoplasts & Spheroplasts.	(2)
b.	List any two functions of Bacterial capsule.	(2)
c.	Give one example of bacteria with Peritrichous Flagella	(1)
d.	Define Amphoteric stain and give example.	(1)
e.	Name one dye used as a pH indicator	(1)
f.	Define RQ and state its significance.	(2)
g.	Define Curie	(2)
h.	What are trans fats and state their two disadvantages.	(2)
i.	What is the RDA of proteins?	(1)

1/43 **2305E828** Candidate's Seat No :

B.Sc. (Sem.-V) Examination

S.E. 305 Biochemistry A

Time : 3 Hours] **May-2017** **[Max. Marks : 70**

Q1(a) Discus: Isolation, purification & estimation of DNA (14)

OR

Discuss steps of purification of chromosomal DNA (08)

Write a note on Restriction Enzymes (06)

Q2. Write a note on Restriction Enzymes

1. Southern blotting technique (14)
2. Maxam –Gilbert method of DNA sequensing
3. Sanger's method of DNA sequencing.

Q3. Explain the followings : **(ANY TWO)** (14)

1. The principle & steps of PCR.
2. Applications of PCR & its advantages over gene cioning.
3. Variations of PCR

Q4(a) Write a note on:Mancini immunodiffusion & Ouchterlony immunodiffusion method (06)

(b) What is ELISA? Explain Direct and Sandwich ELISA technique. (08)

OR

Q4 (a) What is Hybridoma technique? Explain in detail (07)

(b) Explain:Immuno electrophoresis (07)

Q5 Answer in brief: **(14)**

1. Draw & label λ phage genome (02)
2. Give the nomenclature of restriction enzyme giving an example. (02)
3. Define : PROBE & NICK (02)
4. What is insertional inactivation? (02)
5. State principle behind RIA. (02)
6. State two applications of Hybridoma technology (02)
7. Name the scientists who developed monoclonal antibody technique. (02)

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2005E767

Candidate's Seat No :

B.Sc. (Sem.-V) Examination

303 CC Biochemistry

Time : 3 Hours] **May-2017** **[Max. Marks : 70**

Q-1 (a) What precautions are needed while handling enzyme so it don't get inactivated ? (4)

(b) Define co-enzyme & cofactors, explain them with examples. (4)

OR

(a) Discuss different types of specificity of enzymes (4)

(b) Giving importance of multienzyme complex explain any one example of MEC. (MEC), (7)

Q 2 Explain in detail - with respect to structure, location, composition - [any one]. [14]

(1) immobilized enzyme with membrane

OR

(1) Similar enzymes in different organs.

Q-3 Explain in detail [Any one]. [14]

[1] Types of classes of Enzyme classification

OR

[1] Factors affecting enzyme activity.

Q-4 (a) Explain graph of allosteric & non-allosteric enzyme activity. (7)

OR

(a) Give ~~importance~~ advantages & disadvantages of allosteric enzymes (7)

(b) Giving examples of positive modulator, Give any one allosteric enzymes. (7)

OR

(b) Short note on Aspartate Trans Carbamylase. (7)

Q-5. (a) Give one example of co-enzyme, apo-enzyme (2)

(b) Give one exaple of Metalloenzyme, Extremozyme (2)

(c) Give effect of saturation of substrate on enzyme activity (2)

(d) Give examples of Transferase, Ligase (2)

(e) Define : Ribozyme, ES-complex (2)

(f) Explain ping-pong mechanism (2)

(d) Give contribution of Michelis-Menten in Enzymology (2)