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GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Third Semester – Regular) Examinations, December – 2020

BPCBT 3030 – Biochemistry

(Biotechnology)

Time: 2 hrs

Maximum: 50 Marks

The figures in the right-hand margin indicate marks.

- PART – A: (Multiple Choice Questions)** **(1 x 10 =10 Marks)**
- Q.1. Answer ALL questions** [CO#] [PO#]
- | | | |
|---|-----|--|
| a. _____ the smallest amino acid, has a hydrogen atom as the R group. | CO1 | PO1 |
| (i) Valine | | (ii) Glycine |
| (iii) Proline | | (iv) Threonine |
| b. Which of the following is false? | | |
| (i) Fats provide insulation | | (ii) Fats maintain healthy skin and hair |
| (iii) Vitamin A, D, E and K are fat soluble only | | (iv) Fats provide instant energy |
| c. Which of the following is NOT an endocrine gland? | CO2 | PO1 |
| (i) Hypothalamus | | (ii) Pituitary |
| (iii) Parathyroid | | (iv) Pancreas |
| d. Which out of the following has the highest redox potential? | CO2 | PO1 |
| (i) NAD | | (ii) FMN |
| (iii) FAD | | (iv) O ₂ |
| e. Conversion of acetyl co-A to malonyl co-A requires which of the following? | CO2 | PO1 |
| (i) NADPH | | (ii) H ₂ O |
| (iii) Folic acid | | (iv) Biotin |
| f. In the first committed step of pyrimidine biosynthesis, the reaction is catalyzed by _____ | CO3 | PO1 |
| (i) Adenylate kinase | | (ii) Aspartate transcarbamoylase |
| (iii) Dihydroorotase | | (iv) Cytidylate synthase |
| g. High concentration of glucose 6-phosphate is inhibitory to _____ | CO3 | PO1 |
| (i) Hexokinase | | (ii) Pyruvate kinase |
| (iii) Glucokinase | | (iv) Phosphofructokinase-1 |
| h. Name the inhibition where end products of biosynthesis pathway inhibit the activity of the first enzyme? | CO4 | PO1 |
| (i) Feedback inhibition | | (ii) Feedback repression |
| (iii) Allosteric inhibition | | (iv) Competitive inhibition |
| i. Which of the following hormone is not used in the hydrolysis of triacylglycerol into the fatty acids in adipose tissues? | CO3 | PO1 |
| (i) Epinephrine | | (ii) Norepinephrine |
| (iii) Glucagon | | (iv) Insulin |
| j. Name the amino acid which does not take part in transamination during amino acid catabolism. | CO4 | PO1 |
| (i) Proline | | (ii) Threonine |
| (iii) Lysine | | (iv) Serine |

PART – B: (Short Answer Questions)**(2 x 5 = 10 Marks)**Q.2. Answer ALL questions

	[CO#]	[PO#]
a. What are reducing sugars?	CO1	PO1,02
b. Define Chargaff's rule	CO2	PO1,02
c. What are the functions of AMP?	CO2	PO1,02
d. What is the rate determining step in fatty acid biosynthesis?	CO3	PO1,02
e. What is Co-enzyme A.	CO4	PO1,02

PART – C: (Long Answer Questions)**(6 x 5 = 30 Marks)**Answer ANY FIVE questions

	Marks	[CO#]	[PO#]
3. Describe the organization of protein structures with neat diagram?	(6)	CO1	PO1, 02,02
4. Write the classification of Carbohydrates?	(6)	CO1	PO1, 02,02
5. Describe the Double Helix Model of DNA	(6)	CO2	PO1, 02,02
6. Define P/O ratio and write a note on low and high energy compounds?	(6)	CO2	PO1, 02,02
7. List out and explain the significance of metabolites synthesized from TCA cycle?	(6)	CO3	PO1, 02,02
8. Describe β -oxidation pathway in detail	(6)	CO3	PO1, 02,02
9. Explain the biosynthesis of Methionine and threonine	(6)	CO4	PO1, 02,02
10. Write in detail Mechanism of enzyme action?	(6)	CO4	PO1, 02,02

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