

Code No: A109211101

R09**Set No. 2**

II B.Tech I Semester Examinations, MAY 2011

APPLIED BIOCHEMISTRY

Bio-Medical Engineering

Time: 3 hours

Max Marks: 75

Answer any FIVE Questions
All Questions carry equal marks

1. Write about aerobic pathway of pyruvate metabolism. [15]
2. (a) Name different type of cell death explain each of them.
(b) Mention the functions of Nucleus, Nucleolus and cytosol. [7+8]
3. Explain the DNA structure proposed by Watson and Crick with neat diagram. [15]
4. (a) Define muta rotation and explain it with suitable examples.
(b) What are anomers. Explain with examples. [8+7]
5. (a) An Eadie-Hofstee plot has values of V_0 on the ordinate and $V_0/[S]_0$ on the abscissa. Draw such a coordinate - axial system. How are K_m and V_{max} obtained from such a graph?
(b) Construct a Hanes-Woolf plot and show how K_m and V_{max} are obtained from it. [8+7]
6. Describe in detail the chemical composition of blood. [15]
7. Define column chromatography. Describe the commonly used matrix materials in column chromatography. [15]
8. (a) Write equation relating free energy and electron transfer. Write its importance.
(b) Describe Enzymes and carrier molecules involved in electron transfer. [6+9]

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R09**Set No. 4**

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APPLIED BIOCHEMISTRY

Bio-Medical Engineering

Time: 3 hours

Max Marks: 75

Answer any FIVE Questions
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1. (a) Write the method of studying the structure and function of cell by light microscopy.
- (b) Give the function of the following organelles.
 - i. Lysosomes.
 - ii. Mitochondria.
- (c) Give some examples for prokaryotic and eukaryotic Organisms. [5+5+5]
2. Discuss the role of kidney in the regulation of blood pH. [15]
3. (a) Define buffer. Explain the principle of buffering with an example.
- (b) Write a note on physiological buffers. [7+8]
4. Explain the following:
 - (a) Applications of GLC
 - (b) Molecular exclusion chromatography
 - (c) Ion-exchanger
 - (d) Retention time. [3+5+4+3]
5. (a) What is the role of hydrogen peroxide in phagocytosis.
- (b) Write a note on inhibitors of oxidative phosphorylation. [5+10]
6. (a) Derive the two-site Adair equation.
- (b) can the value of n in the Hill equation, when it is fitted to real data, ever be less than 1. [7+8]
7. Define genetic code and discuss its characteristic features. Discuss about sigma factor and replication fork. [8+7]
8. List out the excretory products of metabolism. Describe how they are formed in the body. [15]

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Set No. 1

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Bio-Medical Engineering

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1. Define the following :
 - (a) Pyruvate dehydrogenase
 - (b) Succinate dehydrogenase
 - (c) Acyl-COA dehydrogenase. [7+4+4]
2. (a) Write Multireactant enzymes with three examples.
(b) What is significance of studying the effect of pH on the rates of enzymatic reactions? [7+8]
3. (a) How may cells be disrupted to obtain subcellular organelles.
(b) How many RBC available in an average 70kg person.
(c) Draw the structure and uses of mitochondria. [5+5+5]
4. Compare and contrast Gel filtration and ion exchange chromatography. [15]
5. (a) Give various confirmations of D-glucose.
(b) Write an account and significance of polysaccharide. [8+7]
6. Explain the steps involved in the synthesis of cholesterol. [15]
7. What are Ketone bodies? Explain how Ketone bodies are formed and its clinical significance? [3+12]
8. Explain in detail about the RT-PCR and its applications. [15]

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R09**Set No. 3**

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APPLIED BIOCHEMISTRY

Bio-Medical Engineering

Time: 3 hours

Max Marks: 75

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Write the significance and mechanism of the following.
 - i. Methylene blue
 - ii. PAS.(b) Name the organic substances present in cell. [8+7]
2. Discuss the general laboratory method adopted for measuring glucose, protein along with clinical significance. [15]
3. Explain the following with examples.
 - (a) Reversible inhibition.
 - (b) Irreversible inhibition.
 - (c) Allosteric inhibition. [4+4+7]
4. What are bile salts and bile pigments? Explain how they are formed and their clinical significance? [15]
5. (a) Mention importance of high energy compounds with examples and its importance.
(b) Write electron chain (ETC) OR respiratory chain. [10+5]
6. (a) Differentiate between monosacchride and disaccharide.
(b) Give the biological importance of oligosaccharides.
(c) Give an account on poly saccharide. [4+7+4]
7. Discuss various types of PCR and its applications. [15]
8. Explain how the process of biosynthesis and break down of fatty acids are regulated? [15]
