

**Q.P CODE : 1301**

**SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH**  
(A DEEMED TO BE UNIVERSITY)

**Post Graduate Degree Examination – April / May 2011**

Time : 3 Hrs.

[Max. Marks : 100]

**M.D. BIOCHEMISTRY**

**PAPER - I**

*Your answers should be specific to the questions asked.  
Draw neat labeled diagrams wherever necessary. Answer all questions*



**LONG ESSAY**

**2 X 20 = 40 Marks**

1. Describe the structure of haemoglobin. How do allosteric effectors influence the oxygenation of haemoglobin?
2. What is the principle of the polymerase chain reaction (PCR)? Describe the various steps involved in this reaction. What are the applications and advantages of this technique?

**SHORT ESSAY**

**6X 10 = 60 Marks**

3. Briefly describe methods used in elucidation of the primary structure of a protein.
4. Discuss disaccharides of physiological importance
5. Briefly describe glycolipids of importance in the human body
6. Describe the properties, sources and effects of free radicals in the body
7. Discuss the principle, procedure and applications of sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE)
8. Describe the components and functions of physiologically important nucleotides.

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**PAPER - II**

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**LONG ESSAY**

**2 X 20 = 40 Marks**

1. How does glucose enter cells in the human body? Discuss the enzymes involved in phosphorylation of glucose inside cells, with special reference to their similarities and differences. What is the physiological relevance of each type? (5+10+5)
2. Describe the processes involved deposition of fat in adipose tissue when excess Calories are consumed by a person.

**SHORT ESSAY**

**6X 10 = 60 Marks**

3. Describe the process of oxidative deamination of amino acids
4. Discuss alkaptonuria
5. Discuss causes of secondary hyperuricaemia
6. Explain the chemiosmotic theory of oxidative phosphorylation
7. Describe the process by which extra-mitochondrial reduced NAD (NADH) undergoes oxidation
8. Describe the formation and roles of polyamines in the body

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Q.P CODE : 1303

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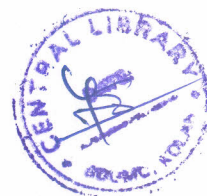
Time : 3 Hrs.

[Max. Marks : 100]

**M.D. BIOCHEMISTRY**

**PAPER - III**

*Your answers should be specific to the questions asked.  
Draw neat labelled diagrams wherever necessary. Answer all questions*



**LONG ESSAY**

**2 X 20 = 40 Marks**

1. Describe the metabolic processes involving carbohydrates, fats and amino acids that occur in the liver and brain, both in the well-fed state and during fasting.
2. Describe the various mechanisms involved in regulation of enzyme activity.

**SHORT ESSAY**

**6X 10 = 60 Marks**

3. Describe the importance of vitamins in the metabolism of methionine
4. Discuss the association between dietary fats and coronary artery disease
5. Discuss the importance of glycemic index of carbohydrates
6. Describe the clinical manifestations of vitamin K deficiency and the pathogenesis of these features
7. Describe the processes involved in absorption of iron from the gastrointestinal tract.  
How are these processes regulated.
8. Discuss the effect of substrate concentration on the rate of an enzyme-catalyzed reaction.

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**Q.P CODE : 1304**

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[Max. Marks : 100]

**M.D. BIOCHEMISTRY**

**PAPER - IV**

*Your answers should be specific to the questions asked.  
Draw neat labelled diagrams wherever necessary. Answer all questions*



**LONG ESSAY**

**2 X 20 = 40 Marks**

1. Describe various Biochemical tests to diagnose thyroid functions
2. Discuss the causes and clinical diagnosis of Hypokalaemia

**SHORT ESSAY**

**6X 10 = 60 Marks**

3. Detection of microalbumin in urine and its clinical significance
4. Vanillyl mandelic acid (VMA)
5. Prenatal diagnosis in genetic disease
6. Polyamines and its plausible role in cancer
7. Test to assess exocrine pancreatic functions
8. Prostate specific antigen

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