Question Paper Code:U1031

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

M.B.B.S Phase-I Degree Examination JULY 2019

Time:3 hours **Max Marks:100**

BIOCHEMISTRY- PAPER 1

Your answer should be specific to the question asked.Draw neat and labeled diagrams wherever necessary.

LONG ESSAY ***2 X 10 = 20 Marks***

1. Describe various types of enzyme inhibition with graphs. Write any three practical uses of enzyme inhibitors in medicine. (7+3)
2. Mention dietary sources, RDA, biochemical functions and deficiency manifestations of Folic acid. Add a note on folate antagonists. (1+1+4+2+2)

SHORT ESSAY ***10 X 5 = 50 Marks***

3. What is primary structure of proteins? What is its significance? How is primary structure determined? (1+2+2)
4. Define Respiratory Quotient. Write the RQ of carbohydrates,lipids and proteins. Why lipids have low RQ value than carbohydrates? (1.5+1.5+2)
5. Classify hormones based on the location of their receptor and give two examples for each group.
6. Classify complex lipids with examples. Explain the biomedical importance of Lecithin (2.5+2.5)
7. Classify carbohydrates with suitable examples. Describe any two polysaccharides with respect to composition and biomedical importance. (3+2)
8. Classify Renal function tests. Explain the laboratory tests to assess tubular function (3+2)
9. Describe the structure with a neat labelled diagram of Ig G and mention its function.
10. What are disaccharides? Classify them with examples. Add a note on reducing disaccharides. (1+2+2)
11. What are Prostaglandins? Mention the precursor molecule. Explain the biological functions of prostaglandins. (1+1+3)
12. Describe the formation and actions of cyclic GMP.

SHORT ANSWERS ***10 X 3 = 30 Marks***

13. What is the general test for the identification of proteins ? Write its principle .
14. Mention the biomedical importance of: a) S-adenosyl methionine b) 5-deoxyadenosylcobalamine c) Arabinosylcytosine
15. Arachidonic acid is not a true essential fatty acid. Why ?
16. Give three examples of specialized membrane structures.
17. What is Nitrogen balance? Mention two conditions with positive nitrogen balance.
18. Give three examples of Radioisotopes and its applications in medicine.
19. Write the biological refernce interval for a) FBS b) PPBS c) HbA1c
20. What are reactive oxygen species?Name them and write their sources.
21. List different types of active transport and give one example for each.
22. What are hormone responsive elements? Mention its significance

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BIOCHEMISTRY- PAPER 2

Your answer should be specific to the question asked.Draw neat and labeled diagrams wherever necessary.

LONG ESSAY ***2 X 10 = 20 Marks***

1. Define pH?Explain various mechanisms by which Acid- Base balance is maintained in the body. (1+9)
2. Classify the different types of DNA Damage. Explain the different DNA damage repair mechanisms.

SHORT ESSAY ***10 X 5 = 50 Marks***

3. Explain the salvage pathway of purine synthesis. Write its biological significance. (3+2)
4. Write the differences between oxidative phosphorylation and substrate level phosphorylation. Give two reactions as examples for substrate level phosphorylation. (3+2)
5. Explain triglyceride degradation or lipolysis. Add a note on hormonal action on lipolysis. (3+2)
6. Enumerate the biologically important compounds derived from glycine. Give their biomedical importance. (2+3)
7. Describe Galactose metabolism.
8. List the sources of Iron. Write the a) factors affecting b) mechanism and c) regulation of gastrointestinal absorption of iron. (1+1+2+1)
9. Define Atherosclerosis. Explain the risk factors and complications of Atherosclerosis.
10. What are Phase I reactions of detoxification? Explain with suitable examples.
11. Describe different levels of study of metabolism giving suitable examples.
12. What are Tumor suppressor genes? Explain their mechanism of action taking a suitable example.

SHORT ANSWERS ***10 X 3 = 30 Marks***

13. Write the Biological reference range of serum uric acid. Mention two conditions with raised uric acid levels.
14. What are high energy compounds? Give four examples.
15. What is the role of citrate in fatty acid synthesis?
16. What is homocysteine? Mention any two conditions causing homocysteinemia.
17. Mention three reducing substances excreated in urine.
18. Mention the enzyme defect and clinical features of porphyria cutania tarda.
19. Give three examples fo each of chemical carcinogens and viral carcinogens.
20. List any three methods of gene transfer.
21. Give the reference range for plasma osmolality and list any two conditions where plasma osmolality is increased.
22. What is rotor syndrome? Mention the biochemical defect.

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BIOCHEMISTRY- PAPER 2

Your answer should be specific to the question asked.Draw neat and labeled diagrams wherever necessary.

LONG ESSAY (Answer any 2) ***2 X 10 = 20 Marks***

1. Define pH. What is normal blood pH? Explain the mechanisms by which blood pH is maintained in the body. (1+1+8)
2. Define translation. Describe in detail the steps involved in translation. Name and locate the inhibitors of translation. (1+7+2)
3. Describe denovo synthesis of adenosine. Indicate the clinical uses of inhibitors of purine nucleotide synthesis. (7+3)

SHORT ESSAY (Answer any 10) ***10 X 5 = 50 Marks***

4. What are high energy compounds? Classify them with examples. Explain the role of ATP as high energy compound.(1+2+2)
5. Name ketone bodies. Explain the pathophysiology of Ketoacidosis. (1.5+3.5)
6. Describe the fate of Carbon Skeleton of Amino Acids.
7. Describe Uronic acid pathway. Explain the significance of this pathway? (3.5+1.5)
8. Write the dietary sources, Recommended daily allowance, functions and deficiency manifestations of zinc. (1+1+1.5+1.5)
9. What are Phase II reactions of detoxification? Explain with suitable examples.
10. Describe different levels of study of metabolism giving suitable examples.
11. What are Tumor suppressor genes? Explain their mechanism of action taking a suitable example.
12. Describe the formation and disposal of Bilirubin in the body.
13. Write the steps involved in metabolism of Galactose. Add a note on galactosemia. How galactosemia is associated with cataract? (3+1+1)
14. Explain triglyceride degradation or lipolysis. Add a note on hormonal action on lipolysis. (3+2)
15. Write the differences between oxidative phosphorylation and substrate level phosphorylation. Give two reactions as examples for substrate level phosphorylation. (3+2)

SHORT ANSWERS (No choices) ***10 X 3 = 30 Marks***

16. What is the role of NADPH in lipid metabolism?
17. What is the role of citrate in fatty acid synthesis?
18. Write the formation & function of Gamma Amino Butyric Acid (GABA)
19. Write the differences between Glucokinase and Hexokinase.
20. What is rotor syndrome? Mention the biochemical defect.
21. List any three carcinogens.
22. Mention any three functions of Chromium.
23. What is osmolal gap? Mention its significance.
24. Define Atherosclerosis. Mention any two risk factors for atherosclerosis.
25. Write the biochemical changes in a) Glycinuria b) Primary hyperoxaluria.