2019 Scheme

Q.P. Code: 116001 **Reg. no.: .....**

First Professional MBBS Degree Regular/Supplementary Examinations
November 2023
Biochemistry - Paper II

Time: 3 Hours **Total Marks: 100**

- ***Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space***
- ***Answer all parts of a single question together • Leave sufficient space between answers***
- ***Draw table/diagrams/flow charts wherever necessary***

Long Essays **(2x15=30)**

1. A 54-year-old man was admitted to emergency in a disoriented state. He had a feeble pulse, low blood pressure and sweetish odour of breath. Arterial blood gas analysis showed pH : 7.1, HCO_3 :11 mmol/L, pCO_2 : 38 mmHg.
   a) What is the most likely acid base disorder in this case
   b) Interpret the ABG findings and give the normal reference interval
   c) Give four causes for the above acid base disorder
   d) Enumerate the major buffer systems in the body
   e) Discuss the renal regulatory mechanisms of acid base balance (1+3+4+3+4)
2. Describe the absorption, transport and storage of iron in the body. Explain the regulation of iron homeostasis. Enumerate the biochemical functions of iron. Add a note on disorders associated iron metabolism. (6+3+2+4)

Short essays **(5x8=40)**

3. Give the sources of carbon and nitrogen atoms of purine and pyrimidine rings. How is the de novo synthesis regulated. Indicate the clinical uses of inhibitors of purine nucleotide synthesis. (2+2+2+2)
4. Describe the process of DNA replication in eukaryotes. Name two inhibitors of replication. (6+2)
5. Describe recombinant DNA technology. Add a note on its applications. (5+3)
6. Name the renal clearance tests. Give details of any one of them. What is its clinical significance (3+4+1)
7. Enumerate the immunoglobulin and classify their functions. Describe the structure of immunoglobulins. (5+3)

Short answers **(5x4=20)**

8. Oncogenes
9. Hormonal regulation of calcium level
10. Van den Bergh test
11. Post translational modifications.
12. Antioxidants

Give Precise Answers **(10x1=10)**

13. Hyperkalaemia is treated by giving glucose and insulin. Why
14. Name two antimutagens
15. Enlist two applications of Southern blotting technique.
16. Name two vectors used for gene therapy.
17. What is apoptosis.
18. Name two inhibitors of RNA synthesis
19. Enzyme defect in orotic aciduria.
20. Name two copper containing enzymes.
21. Which amino acids are used for detoxification.
22. Give the reference interval in plasma to (a) Sodium (b) Chloride

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