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01113B

First M.B.B.S. (2019) Examination, (Phase - I) Winter - 2023
BIOCHEMISTRY - II

Total Duration : Section A+B = 3 Hours Section B Marks : 80

SECTION - B

Instructions :
1) *Use black ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover the entire syllabus within the stipulated frame. This format is a mere guideline. Questions from the syllabus can be asked in any paper. Students can not claim that the Question is out of syllabus, as this format and distribution has been given only for the sake of placement.*
7) *Use a common answer book for all sections.*

2. Brief Answer Question (Any Ten out of Eleven) : **[10 × 2 = 20]**

a) Name the bile pigments and bile salts. Write the tests performed for their detection in urine.

b) What is the folate trap? Write its significance.

c) What are biologically active peptides? (List any four). Write their significance.

d) What is the role of antioxidants? Name four antioxidants.

e) Write the rationale for using Fluoride and Dicoumarol as the anticoagulants.

f) List the storage forms of Iron. State their significance.

g) An isoelectric pH of the protein -Definition and applications.

h) State the roles of cAMP (any two).

i) Write any four characteristics of genetic code.

j) State the significance of glutathione (any two).

k) State the deficiency manifestations of vitamin B-12. (any four)

3. **Short Answer Question (Any Eight Out of Nine) :** [8 × 5 = 40]

a) Define respiratory acidosis. Also describe its effects, the related disorders and compensatory mechanism. [1+1+1+2]

b) Define clearance tests. Describe the details and importance of Creatinine clearance tests.

c) Thalassemia: Definition, types and causes. [1+2+2]

d) A new born infant developed jaundice within 24 hours of birth. His Serum total bilirubin was 20.36 mg/dl, the conjugated bilirubin: 0.93 mg/dl and unconjugated bilirubin 19.43 mg/dl. He was immediately kept on phototherapy.

i) Identify the probable diagnosis.

ii) Explain the biochemical basis of jaundice in this infant.

iii) What is Kernicterus?

iv) What is the biochemical basis of phototherapy?

[1+1.5+1+1.5]

e) What is hyperuricemia? State its etiology. (any two) [1+4]

f) Write a short note on Sickle cell anaemia stating the molecular defect and its impact. [1+2+2]

g) A 65-year-old chronic smoker and the alcoholic suffered from nonspecific symptoms like painful swallowing, insomnia epigastric discomfort and recurrent diarrhoea. On examination, he had disorientation, stomatitis, glossitis, esophagitis and exfoliative dermatitis.

i) What is the probable diagnosis?

ii) Which is the biomolecule deficient?

iii) State the biochemical role of the deficient molecule.

iv) Which dietary modifications can be suggested to the patient

[1+1+2+1]

h) What are Post translational modifications. Explain with suitable examples. List the inhibitors of translation process. [1+2+2]

i) Describe the factors affecting absorption of Calcium. Add note a note on Hypocalcemia. [3+2]

4. **Long Answer Questions (Any Two out of Three) :** **[2 × 10 = 20]**

a) What is the normal pH of blood? Enumerate important buffer systems of the body. Describe renal mechanisms to regulate the acid base homeostasis. **[1+4+5]**

b) Describe the sources, RDA, biochemical functions and deficiency manifestations of Vitamin A. **[1+1+4+4]**

c) What is Genetics engineering? List any two vectors used. State the applications. **[2+2+6]**