

# RUHS

## First Year MBBS Examination

### I MBBS BIOCHEMISTRY PAPER II

Time: 3 hours Max Marks: 100

Date: 13-04-2023

Instructions: INSTRUCTIONS: Attempt all questions in both sections: (Use separate answer book for each section)

#### Section 1

1. Fill in the blanks: (6)
  - a. The most common amino acid present in collagen is, \_\_\_\_\_
  - b. Limiting amino acid in pulses is \_\_\_\_\_
  - c. Phase - I xenobiotic metabolism hydroxylation reactions are often catalyzed by group of enzymes called \_\_\_\_\_
  - d. Urobilinogen is absent from urine in \_\_\_\_\_ jaundice.
  - e. Hybridoma cell can be used to produce \_\_\_\_\_ antibodies
  - f. Xeroderma pigmentosum results from a defect in the \_\_\_\_\_ repair system.

2. Choose the correct option in the following

multiple choice questions: (4)

- a. Which of the following is the best index of nutritive value of a protein?
    - a. Biological value
    - b. Protein energy ratio
    - c. Net protein utilization
    - d. Net dietary protein value
  - b. Which among the following is protein coding RNA?
    - a. mRNA
    - b. tRNA
    - c. rRNA
    - d. SiRNA
  - c. Antibody that can cross protein to protect foetus:
    - a. IgA
    - b. LGb
    - c. IgD
    - d. LGm
  - d. Increased ALP (Alkaline phosphatase) in jaundice;
    - a. Liver damage -b
    - b. Biliary obstruction
    - c. Hemolysis
    - d. Viral infection
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3. Two brother one aged 3 years and other aged 2 years present to OPD for complaint of swelling over the body with protruded abdomen. They belong to poor family. (15)  
Family is mainly surviving on rice as their staple meal with no access to dal and fruits or vegetables. On examination, both children were lethargic, abdomen was noticeably enlarged. Lower limbs showed pitting pedal edema with scaly peeling of skin at certain places. Hair examination revealed bands of hypo pigmentation. Blood investigation revealed hypoalbuminemia in both the children.

- a. Comment on the above diagnosis?
- b. Explain the biochemical basis of clinical symptoms & sign?
- c. How is the protein energy malnutrition (PEM) classified?
- d. What is the difference between marasmus and kwashiorkor?
- e. What is the line of management in such cases?

4. Write short notes on: (10)

- a. Proto oncogene.
  - b. Inhibitors of replication in both prokaryotes and eukaryotes.
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- c. Diagnostic uses of PCR.

- d. Tumor markers with associated cancers.
- e. Functions of immunoglobulins.
- 5. Explain briefly (Any three): (15)
  - a. Process of detoxification.
  - b. Biochemical basis of monoclonal antibodies in cancer therapy.
  - c. Mechanism of DNA repair.
  - d. Creatinine clearance.

## Section 2

- 6. Explain the mechanism of transcription? How it is regulated? Mention inhibitors of transcription (20)
- 7. Explain Why (Any five): (10)
  - a. Glutathione is an important mediator for detoxification of toxic material in humans.
  - b. Yeast artificial chromosome can act as high capacity vector in DNA cloning.
  - c. Serum creatinine is better indicator than serum urea for renal function test.
  - d. Excessive carbohydrate consumption leads to obesity.
  - e. A singlet - RNA can recognize more than one codon.
  - f. ~~Ps oncosuppressor gene prevents the~~

development of cancer.

8. Explain briefly (Any four): (20)
- a. Balanced diet (A.513)
  - b. Glomerular filtration rate.
  - c. Enzymes used as liver function test.
  - d. Glycemic index.
  - e. Northern blot technique.

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