16-08-2024

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I-MBBS

(This paper consists of 2 pages)

First M.B.B.S. (New Scheme) (Main) Examination

August- 2024

Biochemistry

Paper- II

Time: Three Hours

Maximum Marks: 100

Attempt all questions in both sections

(Use separate answer book for each section)

Section-A

1. Fill in the blanks: 6 x 1 = 06

a) Purine and pyrimidine nucleotide biosynthesis share a common precursor _____.

b) DNA is packed in a highly organised condensed structure known as _____.

c) Peptidyl transferase reaction occur on _____ subunit of ribosomes.

d) An oncogene is mutated form of a _____.

e) _____ cells cannot be killed by apoptosis.

f) The immunoglobulin that can find mast cells and release of histamine and slow reacting substance is _____.

2. Choose the correct option in the following multiple choice questions: 4 x 1 = 04

i) In primary hypothyroidism, the lab findings are:

a) Decreased TSH b) Increased T3

c) Increased TSH d) Increased T4

ii) Gout attack commonly occurs at this site:

a) Knee b) Ankle

c) Foot d) Big toe

iii) Marfan's syndrome is caused by the following defective protein:

a) Fibrinogen b) Fibrilli

c) Fibronectin d) Collagen

iv) The urine of the patient with obstructive jaundice will give a positive test for:

a) Fouchet's test b) Sodium nitroprusside test

c) Benzidine test d) Precipitation test

3. One year old female child comes to OPD with retarded growth and emaciated appearance (wasting of muscle). No edema is present. The condition is diagnosed by physician as marasmus.

a) Define protein energy malnutrition. 02

b) What is marasmus? 02

c) What are the differences between marasmus and kwashiorkor? 06

d) What is the cause of emaciated appearance? 02

e) What should be the preventive measure in this condition? 03

1

4. Write short notes on: 5 x 2 = 10

a) Tests to assess biosynthetic function of liver.

b) What are the laboratory tests done for diagnosis of adrenal hypofunction and hyperfunction?

c) Splicing of hnRNA (hetero nuclear RNA).

d) Applications of Electrophoresis.

e) Structure of tRNA and its function.

5. Explain briefly (Any three): 3 x 5 = 15

a) Primary and secondary immune response.

b) What are Oncogenes? Name four tumour markers with their clinical relevance.

c) List the blot/blotting techniques and the application of each type.

d) Define Detoxification. Mention four reactions of Phase 2 detoxification.

Section-B

6. Give an account with illustrations on Translation in prokaryotes with its inhibitors. Add a note on post- translational modifications. 20

7. Explain why (Any five): 5 x 2 = 10

a) DNA is much more stable than RNA.

b) Dietary purines are non-essential.

c) Telomerase have been implicated in aging process and cancers.

d) Why does Von Gierke disease cause gouty arthritis?

e) Bence Jones proteins are a marker used to diagnose and monitor certain diseases.

f) Why do we need dietary fibre?

8. Explain briefly (Any four): 4 x 5 = 20

a) Mutation.

b) Antioxidants: Definition and classification.

c) Creatinine clearance tests and its significance.

d) Application of recombinant DNA technology.

e) Outline the pathway of purine catabolism.