

**Madhya Pradesh Medical Science University,
Jabalpur
MBBS First Professional Examination Dec-2022
Subject- Biochemistry
Paper- II**

Time: 3:00 Hours

Maximum Marks :100

Instructions:

- a) All questions are compulsory
- b) Draw diagrams wherever necessary
- c) Answers of Questions and Sub-questions must be written strictly according to serial order of question paper.
- d) MCQ has to be answered in theory answer book
- e) Please write MCQ answer neatly and in serial order with black or blue pen in brackets; for example: - 1. (a) 2. (c)
- f) MCQ has to be answered only once, any kind of repetition or cutting or erasing or whitener will be considered as malpractice, such answers will not be counted in marks and action will be taken according to UFM rules of university.
- g) Subjective answer should be answered in up to 30 words per marks. For example, if a question having 2 marks should answered in up to 60 marks.

Q1. Total MCQs: 10

~~10 x 1 = 10~~

1. Opalescent urine is seen in
 - (a) Porphyria
 - (b) Alkaptonuria
 - (c) Chyluria
 - (d) Creatinuria
2. The end product of catabolism of heme is
 - (a) Bile salt
 - (b) Bile acid
 - (c) Bile pigment
 - (d) Uric acid
3. The flow of Genetic information from DNA to RNA to Protein in living cells is
 - (a) Central dogma
 - (b) Replication
 - (c) Transcription
 - (d) Reverse transcription
4. DNA Replication in Eukaryotes is
 - (a) Conservative
 - (b) Semi Conservative
 - (c) Dispersive
 - (d) None of these
5. In Lac operon we see-
 - (a) 1 Regulatory Gene & 1 P site
 - (b) 1 Regulatory Gene, 1 Promoter site & 1 Operator
 - (c) 1 Regulatory Gene, 1 Promoter site, 1 Operator & 3 Structural genes
 - (d) 2 Regulatory Gene, 1 Operator & 3 Structural genes

6. UAA, UAG & UGA are
- (a) Initiating codons
 - (b) codons for lysine
 - (c) codons for arginine
 - (d) Nonsense codons
7. The normal Serum Uric acid is-
- (a) 8-10 mg%
 - (b) 4-7 mg%
 - (c) 1-3 mg%
 - (d) 2-4 mg%
8. The purification of enzymes is mostly done by
- (a) affinity chromatography
 - (b) ion exchange chromatography
 - (c) paper chromatography
 - (d) none of these
9. Which of the vitamins listed has NO anti-oxidant property?
- (a) Vitamin C
 - (b) Vitamin E
 - (c) Vitamin A
 - (d) Vitamin K
10. Which has no role in calculating calorie requirements?
- (a) Respiratory quotient
 - (b) Specific Dynamic Action
 - (c) Nature of work
 - (d) Basal metabolic rate
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Q2. Long Answer Questions

2 x 20 = 40

- a. How heme is synthesized in body. Add a note on various Porphyrrias.
- b. A patient with chronic renal failure was found to had the following laboratory findings: - serum creatinine 3 gm/dL, serum sodium 120 mmol/L, serum potassium 5.8 mmol/L, serum bicarbonate 15 mmol/L.
 - i. what kind of acid base disturbance is like present in this case
 - ii. how does kidney normally regulate extracellular pH

V: explain anion gap
V. explain the rationale of investigation to be done in this patient
- a. KFT
- b. Explain the biochemical tests that will help differentiating the types of jaundice.
- C. Importance and applications of recombinant DNA technology.
- d. Give an account of water distribution and its balance in the body.
- e. Explain regulation of genes by repression with examples.
- f. Mutations

Q4. Short Answer Questions

10 x 2 = 20

- a. What is the principle of adsorption chromatography
- b. Beer and Lambert law
- C. Biochemical alterations in protein energy malnutrition
- d. Wobble hypothesis
- e. Gene therapy
- f. Molecular basis of thalassemia and cystic fibrosis
- g. Functions of nucleotides
- h. Tumour markers
- i. Name the pre renal conditions that cause increased blood urea
- j. Give two examples of purine analogues used as anticancer drugs

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