4. Mention the synthesis of serotonin and give its biological significance. 3+2
5. Describe the characteristics of genetic code.
6. Mention the significance of HMP shunt pathway.
7. Mention the salient features of Watson-Crick model of DNA.
8. What are ketone bodies? Describe the utilization of ketone bodies. 1+4
9. Define energy rich compounds. Mention the classification with examples. 1+4

★★★

UG (CBCS) EVEN SEMESTER EXAM, JULY 2024

PHARMACEUTICAL SCIENCES

(2nd Semester)

Course No: BP - 203T

(Biochemistry – Theory)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

I. A. Multiple choice questions 1×10=10

1. Which type of osazones are formed from maltose?
   a) Oval shaped
   b) Needle shaped
   c) Puff shaped
   d) Sunflower shaped
2. Sucrose is made up of
   a) α-D-glucose & β-D-glucose
   b) α-D-glucose & β-D-fructose
   c) D-glucuronic acid & β-D-glucose
   d) D-glucuronic acid & N-acetyl-D-glucosamine
3. Tryptophan hydroxylase requires the following for its activation:
   a) Biopterin
   b) NADH
   c) NADPH
   d) NADPH + O_2

4. The following is odd chain fatty acid
   a) Arachidonic acid
   b) Valeric acid
   c) Caproic acid
   d) Lauric acid

5. Which of the following is hydroxyl group containing amino acid?
   a) Valine
   b) Isoleucine
   c) Threonine
   d) Asparagine

6. Semi-essential amino acid is
   a) Cysteine
   b) Histidine
   c) Tyrosine
   d) Tryptophan

7. Which of the following type of RNA plays a key role in the processing of rRNA molecules?
   a) Small cytoplasmic RNA
   b) Small nucleolar RNA
   c) Small nuclear RNA
   d) Transfer-messenger RNA

8. Which of the following is called as black urine disease?
   a) Phenylketonuria
   b) Tyrosinemia
   c) Alkaptonuria
   d) None of the above

9. The N_3 of purine nucleotide arises from
   a) Amide group of aspartate
   b) Amine group of glycine

   c) Amide group of glycine
   d) Amide group of glutamine

10. Vitelline is
   a) Globular protein
   b) Chromoprotein
   c) Phosphoprotein
   d) Metalloprotein

I.B. Objective type (Answer the following in brief) 2x5=10

1. Mention the difference between DNA and RNA (4 points).
2. Differentiate between epimers and enantiomers with examples.
3. Describe Chargaff's rule.
4. What are glycerophospholipids? Give two examples.
5. What is rancidity? Describe its types?

II. Long answers (Answer two out of three questions) 10x2=20

1. Describe urea cycle.
2. Discuss anaerobic glycolysis along with its energetics.
3. Describe reversible type of enzyme inhibitors.

III. Short answers (Answer seven out of nine questions) 5x7=35

1. Discuss the IUB classification of enzymes.
2. Describe biosynthesis of pyrimidine nucleotides.
3. Define coenzymes and mention their biochemical functions. 1+4

(Turn Over)