

2125
Bachelor of Science (FYUP), Third Semester
Biochemistry
Intermediatory Metabolism
(Common with B.Sc. Biotechnology 3rd Semester NEP)

Time allowed: 3 Hours

Max. Marks: 60

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one questions from each Unit.

x-x-x

I. Explain or comment on:-

- a) (i) Gluconeogenesis
(ii) Alcoholic fermentation
(iii) omega oxidation
(iv) carnitine shuttle (4x2)
- b) (i) transamination
(ii) ketogenic amino acids
(iii) gout
(iv) Adenosine deaminase deficiency (4x1)

UNIT - I

- II. a) Explain the process of digestion of carbohydrates in body.
b) What do you understand by glycogenolysis? Explain. (2x6)
- III. a) Describe the metabolism of fructose in liver.
b) Write in detail about non-oxidative phase of PPP pathway by drawing the reactions involved. (2x6)

UNIT - II

- IV. a) Explain in detail the process of β -oxidation of saturated fatty acids.
b) Explain in reactions for biosynthesis of ketone bodies. (2x6)
- V. a) Give a short summary of cholesterol biosynthesis. Describe the steps for synthesis of
(i) Activated isoprene from mevalonate
(ii) Squalene to cholesterol.
b) Delineate the reactions for biosynthesis of prostaglandins. (8,4)

P.T.O.

(2)

UNIT - III

- VI. a) Explain the urea cycle through a diagram.
b) Give the reactions for the biosynthesis of creatine. (8,4)
- VII. a) Describe the catabolism of valine and isoleucine.
b) Discuss biosynthesis of serine, glycine and cysteine. (2x6)

UNIT - IV

- VIII. a) Explain the de novo biosynthesis of pyrimidines.
b) Give the reactions for conversion of nucleotides to deoxynucleotides. (8,4)
- IX. a) Describe the breakdown of purine nucleotides.
b) Delineate the pathway for degradation of heme. (7,5)

x-x-x