

(ii) A dicarboxylic intermediate of TCA cycle (2)

(e) Match the following :- (4)

A	Epinephrine	I	NADPH
B	FAD	II	Hemolytic anemia
C	Pantothenic Acid	III	Cyclic AMP
D	Pentose Phosphate Pathway	IV	β -hydroxy butyrate
E	Anaerobic respiration	V	Riboflavin
F	Phosphorylating Subunits	VI	Coenzyme A
G	Ketone Bodies	VII	Lactic acid
H	Pyruvate kinase	VIII	Mitochondria

2. (i) Describe the sequence of reactions in the β oxidation of Palmitic acid with structural formulae. (8)

(ii) Discuss the pathway of Glycogenolysis. (4)

3. (i) How does 6C Glucose is converted to 7C Sedoheptulose phosphate ? Give structural formulae. (8)

(ii) Discuss the Induced Fit Theory of Enzyme action. (4)

4. Write short notes on **any three** of the following :

(i) Urea Cycle

(ii) Oxidative Phosphorylation

(iii) Michaelis Menten constant

(iv) Oxidative Deamination (4+4+4)

SECTION B – IMMUNOLOGY

5. (a) Define
- (i) Adjuvant
 - (ii) ADCC (2)
- (b) Differentiate between the following :
- (i) Selective Theory and Instructional Theory
 - (ii) Variolation and Vaccination (4)
- (c) Expand the following :
- (i) GALT
 - (ii) ELISA
 - (iii) PMN
 - (iv) MHC (2)
- (d) Fill in the blanks :
- (i) Father of Immunology _____ .
 - (ii) Antibody that exist mostly as a pentamer _____ .
 - (iii) Antibody involved in Allergic reactions _____ .
 - (iv) Surgical removal of thymus is called _____ . (2)
- (e) Give reasons why ?
- (i) Secondary immune response is faster than the primary response
 - (ii) Most antigens result in polyclonal or heterogeneous sera (3)
6. (i) Explain the process of Monoclonal Antibody production by hybridoma technology. Give clinical uses of monoclonal antibodies. (6+2)

- (ii) Explain how T-cells are MHC restricted. (4)
7. (i) What are Primary lymphoid organs ? Summarize their functions in immune system. (8)
- (ii) What is an immunogen ? How is it different from an antigen ? (2+2)
8. Write short notes on **any three** of the following :
- (i) DNA Vaccine
- (ii) Active Immunity
- (iii) Spleen
- (iv) Antigen processing and presentation of endogenous antigen (cytosolic pathway) (4+4+4)