

- a) What is the most likely diagnosis?
- b) What is the most likely underlying problem for this patient?
- c) What are the two, most common causes of megaloblastic anaemia and how would this patient's history and examination differentiate the two?
8. Write short answer/one word answer of the following. (1x10=10)
- a) Type IV glycogen storage disease is \_\_\_\_\_.
- b) Name the cardiac specific transaminase.
- c) Name the chain-breaking antioxidant vitamin.
- d) The reagenic immunoglobulin is \_\_\_\_\_.
- e) \_\_\_\_\_ and \_\_\_\_\_ are known as mobile carriers in the electron transport chain.
- f) Hydrolysis of ATP to ADP releases \_\_\_\_\_ kcal/mol of energy.
- g) Due to absence of the enzyme \_\_\_\_\_ in humans they cannot synthesis as carbonic acid.
- h) Name two folic acid antagonists.
- i) True or false:-  
Metabolism of odd chain fatty acids can give glucose in the body.
- j) Inborn error of metabolism of which amino acid can show symptoms of pellagra?



**2021**

Time :As in Programme

Full Marks : 100

*The figures in the right-hand margin indicate marks.*

*Answer **all** questions.*

*Draw diagrams wherever necessary*

**SECTION-A [50-MARKS]**

1. Name the four orders of protein structure. Describe - helix. What are the bonds responsible for stabilisation of a protein structure? (4+6+5=15)
- OR
- Classify lipids giving examples of each class. What are the functions of lipids in our body? (10+5=15)
2. Write short notes on (4x5=20)
- a) Hart up's disease
- b) Structure of collagen
- c) Mutarotation
- d) Vitamin D resistant
- e) Transketolase

(Turn Over)

3. A 47 year old female is brought to the casualty with complaints of malaise, vomiting and fatigue. The patient reveals alcohol abuse for the last 10 years. She has been to rehab on several occasions for alcoholism but has not been able to stop drinking. She develops cough, fever, chills, and upper respiratory symptoms. She reports feeling hungry. On physical examination, she appears malnourished but in no distress. Her physical examination is normal. Her blood count revealed normal white blood cell counts but also showed anaemia with large red blood cells. Other tests were normal. (2.5+2.5=5)

- a) What is the most likely cause of anaemia?
- b) What is the molecular basis for the large erythrocytes?

4. Write short answer/one word answer of the following. (1X10=10)

- a) The apoprotein of LDL is \_\_\_\_\_
- b) Decarboxylation product of histidine is \_\_\_\_\_
- c) FIGLU test is done to detect deficiency of which vitamin?
- d) What are the excretory products produced from tryptophan?
- e) Refsum's disease occurs due to accumulation of \_\_\_\_\_ acid.
- f)  $K_m$  is the \_\_\_\_\_ concentration when velocity is \_\_\_\_\_

(2)

(Contd.)

- g) Kinases require \_\_\_\_\_ as a cofactor.
- h) Define turn over number of an enzyme.
- i) \_\_\_\_\_ is a transport antibiotic.

### SECTION-B [50-MARKS]

5. What is  $\beta$ - oxidation of fatty acids? Describe its steps with schematic diagram. Write a note on the energetics of the path way? (2+8+5=15)

OR

Describe chemiosmotic hypothesis of oxidative phosphorylation. What are uncouplers? Give examples of both chemical and physiological uncouplers.

(7+3+5=15)

6. Write short notes on:- (4X5=20)

- a) Difference between gangliosides and cerebroside.
- b) Clinical significance of troponins.
- c) Leukotrienes
- d) Transport proteins of blood
- e) Cori's cycle

7. A 38 year old vegetarian female presented with fatigue and tingling numbness in her extremities bilaterally. On examination, she was pale with tarry cardia. Her tongue was beefy red. Neuro logical examination revealed numbness in all extremities with decreased vibration sense. The CBC demonstrated megaloblastic anaemia. (1+1+3=5)

(3)

(Turn Over)