OSPE SEND Up 2nd year

1. How glutathione prevents hemolysis in RBC (2)
2. What are the distinctive features of transketolase and transaldolase(2)
3. What are the distinctive features of hexokinase and glucokinase (2)
4. What are the reasons and complications of alkaptonuria (2)
5. Which enzyme is deficient in Gaucher's disease (2)
6. Name the site specific inhibitors of translations (2)
7. Name the hormones synthesized from tyrosine with their metabolic effects (2)
8. What do you mean by melting and annealing with reference to PCR (2)
9. Name the protein hormones and how they enter into the cell (2)
10. Name endo and exopeptidases with their mode of action (2)
11. Name glucose transporters with their sites of actions (2)
12. Mention physiological and synthetic inhibitors of oxidative phosphorylation (2)
13. What is splicing (1)

Question no. 2

Draw and label a diagram to illustrate the components, organization and site specific inhibitors of electron transport chain **(5)**

Question no. 3

What is the total number of ATPs produced in glycolysis? Mention the steps where ATP is synthesized. How glycogen metabolism is regulated? **(2+1+3)**

Question no. 4

Give reasons, complications and remedy of galactosemia **(4)**

Question no. 5

Name glucogenic, ketogenic, and both glucogenic and ketogenic amino acids. Show the entry points of amino acids into citric acid cycle. **(5)**

Question no. 6

A boy was tested positive for phenylketonuria. Further investigations revealed elevated serum concentration of an essential aromatic amino acid:

(i) Which enzyme is most likely to be absent in this patient? **(1)**

(ii) Which amino acid will be raised? What will be the complications? **(2)**

(iii) Name the alternative metabolites that are produced from the amino acid whose level is raised in the disease **(2)**

Question no. 7

Write down the activation, role of Carnitine and production of energy in the beta oxidation of palmitic acid **(5)**

Question no. 8

Mention the steps of synthesis of steroid hormones with enzymes and factors. **(5)**

Question no. 9

Write down the steps of pyrimidine synthesis with enzyme and factors. What is orotic aciduria? **(5)**

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Write down the steps of pyrimidine synthesis with enzyme and factors. What is orotic aciduria? **(5)**

Question no. 10

Mention reasons, complications and remedy of gout **(5)**

Question no. 11

Mention post transcriptional changes in transfer RNA and messenger RNA **(5)**

Question no.12

What is recombinant DNA technology? Mention its applications. Explain palindromic sites and role of restriction endonucleases **(3+2)**

Question no. 13

Mention the metabolic effects of cortisol on carbohydrate, protein and fat metabolism **(5)**

Question no. 14

Write short notes on

(i) Grave's disease **(2.5)**

(ii) Addison's disease **(2.5)**

SEND Up 2nd Year SEQs 2020 (11/09/2020)

Question no. 1

Write down the mechanism of digestion and absorption of carbohydrates **(5)**