18BTP05/14BTP10

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2018
(First Semester)

Branch **-BIOTECHNOLOGY**

METABOLIC REGULATION

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks!
Answer **ALL** questions
ALL questions carry **EQUAL** marks (1 0 x 1 = 10)

1 The rate of breakdown of metabolites is termed as_____ .
(i) metabolic state (ii) metabolism
(iii) steady state (iv) homeostasis

2 The main function of insulin is to
(i) breakdown protein (ii) enable glucose to enter body cells
(iii) allow the absorption of nutrients through the small intestine
(iv) speed up the contractions of the stomach

3 When blood sugar falls glycolysis is halted in liver to allow reverse process names as _____.
(i) aerobic respiration (ii) gluconeogenesis
(iii) anaerobic respiration (iv) homeostasis

4 Incomplete oxidation of glucose into pyruvic acid with several intermediates steps is known as_____ .
(i) TCA-pathway (ii) Glycolysis
(iii) HMS-pathway (iv) Krebs cycle

5 The key regulatory enzyme of fatty acid synthesis is
(i) Acyl Co A synthetase (ii) Acetyl co A carboxylase
(iii) Keto acyl synthase (iv) Thioesterase

6 The key regulatory enzyme of cholesterol synthesis is_____ .
(i) HMG - CoA Synthase (ii) HMG Co A reductase
(iii) HMG Co A lyase (iv) Mevaionate kinase

7 Transamination is catalyzed by_____ .
(i) Transferases (ii) Aminotransferases
(iii) Hydrogenases (iv) Dehydrogenases

8 CTP is formed from UTP by the action of_____ .
(i) Adenylate kinase (ii) Aspartate transcarbamoylase
(iii) Dihyhroorotase (iv) Cytidylate synthase

9 Principal ‘metabolic’ organ of body is_____.
(i) kidney (ii) liver
(iii) stomach (iv) intestine

10 Synthesis of glutamine, usually occurs in_____ .
(i) brain (ii) liver
(iii) muscles (iv) all of above

SECTION - B *(25* Marks!

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 5 = 25)

11 a Write short notes on enzymes and their catalytic activities.

OR

b Explain about the Protein kinase C.

12 a Discuss about the Gluconeogenesis. *

OR

b Explain about the role of protein phosphate.

13 a State the role of acetyle coA carboxylase in fatty acid synthesis and degradation.

OR

b Analyze ketogenesis and its control.

14 a Discuss briefly on proteolysis involved in cellular regulation.

OR

b Evaluate urea cycle and its regulation.

15 a Illustrate the ethanol alerts of energy metabolism in the liver.

OR

b Sketch the organs has unique metabolic profile.

SECTION -C (40 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 8 = 40)

16 a Evaluate hormonal regulation of metabolism in detail.

OR

b Write an essay on energetic of metabolic cycle and its concepts.

17 a Elucidate the enzymes involved in the TCA cycle regulation.

OR

b Enumerate glycolysis and its regulation.

18 a Elaborate lipogenesis of palmatic acid in fatty acid metabolism.

OR

b Determine oxidation of fatty acids in detail.

19 a Discuss about the oxidative Deamination of amino acids and decarboxylation.

OR

b Analyze the degradation and salvage of purine in detail.

20 a Assess the food intake and starvation induces metabolic changes in brief.

OR

b How is the intricate network of reactions in metabolism coordinated?

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