

Makeup

Question Paper

Exam Date & Time: 14-Jun-2019 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester II - End-Semester Examination
PBT-BP203T: Biochemistry
June -2019
Date : 14 / 06 / 2019
Biochemistry [PBT-BP203T]

Marks: 75 Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions. Section Duration: 30 mins

1) Compounds that possess sufficient free energy to liberate atleast 7 calories per molecule at pH 7.0 is/are known as (1)

- Isoenzymes
- Diagnostic enzymes
- High energy compounds
- Redox pairs

2) A biomolecule which serves as storage form of energy to meet long term demand is (1)

- Starch
- Glucose
- Lipid
- Maltose

3) Acetyl CoA is an example of which class of high energy compound? (1)

- Pyrophosphate
- Acyl phosphate
- Enol phosphate
- Thioester

4) Measure of the change in heat content of the reactants, compared to products is (1)

- Free energy
- Bioenergetics
- Entropy
- Enthalpy

5) Which of the following is a substrate for gluconeogenesis? (1)

- Thiamine
- Pyruvate
- Cholesterol
- Acetyl CoA

6) The conjugated proteins with heme group, found in electron transport chain is (1)

- NAD+
- FMN
- CoQ
- Cytochromes

7) The number of ATPs generated per NADH + H⁺ transported to mitochondria by malate aspartate shuttle is (1)

- 6
- 8
- 2
- 3

8) Chemiosmotic hypothesis of ATP generation was proposed by (1)

- Paul Boyer
- Emil Fisher
- Peter Mitchell
- Edward Slater

9) The total number of ATPs produced when Palmitic acid undergoes complete oxidation is (1)

- 129
- 02
- 16
- 131

10) Ketone bodies are not utilized in the liver because of the absence of the enzyme (1)

- Thiophorase
- HMG CoA synthase
- β-hydroxybutyrate dehydrogenase
- HMG CoA lyase

11) The number of ATPs generated from Urea cycle is (1)

- 04
- 00
- 03
- 02

12) The rate limiting step in Krebs-Henseleit cycle is (1)

- Formation of Citrulline
- Synthesis of Carbamoyl phosphate
- Synthesis of arginosuccinate
- Cleavage of arginosuccinate

13) 'Beads on a string' pattern is seen in (1)

10 nm
fibre

20 nm
fibre

30 nm
fibre

Rosette

14) The enzyme mediating committed step in the de novo synthesis of IMP is (1)

PRPP synthetase

PRPP Glutamyl Amido
Transferase

HGPRT

Xanthine Oxidase

15) Which of the following is appropriate for mRNA? (1)

Nucleotides are arranged in triplets called
codons

Always double stranded helix

Thymine is the pyrimidine base

Does not answer orcinol colour reaction

16) The process which is **NOT** a post translational modification is (1)

Intein splicing

3' tailing

Protein folding

Covalent modifications

17) A class of enzyme involving removal of a group or molecule by mechanisms other than hydrolysis is (1)

Lyases

Ligases

Hydrolases

Transferases

18) The enzymes that hold metal ions tightly are commonly known as (1)

Metalloenzymes

Isoenzymes

Holoenzymes

Metal activated enzymes

19) The protein part of holoenzyme is (1)

Coenzyme

Apoenzyme

Diagnostic enzyme

Allosteric enzyme

20) Substrate concentration to produce half maximum velocity in an enzyme catalyzed reaction is (1)

Enzyme kinetics

Line weaver burk plot

Co-substrates

Michaelis Menten
constant

II Long Answers

Answer all the questions.

- 1) Sketch the following pathways of carbohydrate metabolism: (10)
 - a) Phosphogluconate pathway
 - b) Energy generation phase of glycolysis with an account of ATP generation
- 2) With the help of a neat labelled diagram explain DNA replication in prokaryotes. Add a note on replication inhibitors. (10)

III Short Answers

Answer all the questions.

- 3) Define bioenergetics. Enlist the five major biomolecules with their building blocks and major function associated. (5)
- 4) Write short notes on the following: (5)
 - a) Salvage pathway for purine nucleotide biosynthesis
 - b) Glycerol Phosphate shuttle
- 5) Give the enzyme defect, clinical manifestations, diagnosis and treatment associated with phenylketonuria. (5)
- 6) Explain the steps involved in the formation of Urobilin from bile pigments. (5)
- 7) What are ketone bodies? Explain the process of ketogenesis. (5)
- 8) What are enzyme inhibitors? Write short notes on competitive inhibition. (5)
- 9) Give the IUB classification of enzymes and mention a specific reaction under each class. (5)

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