

# Question Paper

Exam Date & Time: 04-May-2019 (09:30 AM - 12:30 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester II - End-Semester Examination MAY-2019

Date: 04-05-2019

### Biochemistry [PBT-BP203T]

Marks: 75

Duration: 180 mins.

#### I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

1) The biomolecule which forms the basis of structure and function of the cell is (1)

Protein

DNA

RNA

Monosaccharide

2) The usual ratio of Carbon, Hydrogen and Oxygen in Carbohydrate is (1)

1:2:1

1:1:1

2:1:2

2:1:1

3) Compound lipids are classified as (1)

Fats & oils and Waxes

Phospholipids and Glycolipids

Steroids and Terpenes

Steroids and Carotenoids

4) An example of Thioester class of high energy compound is (1)

ATP

Acetyl CoA

1,3-BPG

Phosphocreatine

5) The product of stage I of catabolism of Protein is (1)

Amino acids

Acetyl CoA

ATP

Acetoacetate

5) Malate Aspartate shuttle results in the formation of (1)

2 ATP from FADH<sub>2</sub>

3 ATP from FADH<sub>2</sub>

2 ATP from NADH + H<sup>±</sup>

3 ATP from NADH + H<sup>±</sup>

7) ATP synthase is also called as (1)

Complex I

Complex II

Complex III

Complex V

8) The final electron acceptor in ETC is (1)

H<sub>2</sub>O

O<sub>2</sub>

1/2 O<sub>2</sub>

H<sub>2</sub>O<sub>2</sub>

9) An example of a compound that is a true ketone body is (1)

HMG CoA

Acetyl CoA

Acetone

β-Hydroxy Butyrate

10) The number of hydrogen in Cholesterol is (1)

17

01

46

16

11) Alkaptonuria is also known as (1)

Gilbert's disease

Albinism

Cushing's syndrome

Black urine disease

12) Guthrie test is employed to identify (1)

Richner Hanhart syndrome

Hyperbilirubinemia

Jaundice

Phenylketonuria

Pseudogout is due to the deposition of (1)

Calcium Urate

Sodium Urate

Calcium Pyrophosphate

Sodium Pyrophosphate

14) Which of the following arms of tRNA has 7 base pairs (1)

D arm

Acceptor arm

Anticodon arm

Variable arm

15) Which of the following is a transcription inhibitor? (1)

Erythromycin

Rifampin

Etoposide

Doxorubicin

16) Which of the following histone is found on the linker region in a nucleosome? (1)

H1

H2A

H2B

H4

17) Multiple forms of an enzyme catalyzing the same reaction is termed as (1)

Isoenzyme

Coenzyme

Diagnostic enzyme

Allosteric enzyme

18) The type of enzyme inhibition where the inhibitor has close resemblance to the substrate (1)  
is

Non-competitive inhibition

Competitive Inhibition

Suicide Inhibition

Irreversible Inhibition

19) The functional unit of an enzyme is referred to as (1)

Apoenzyme

Coenzyme

Holoenzyme

Proenzymes

20) The term second substrate is often associated with (1)

Holoenzyme

Apoenzyme

Prosthetic group

Coenzyme

### II Long Answers

Answer all the questions.

- 1) Define gluconeogenesis. Explain how pyruvate and lactate act as substrates for gluconeogenesis. (10)
- 2) With respect to nucleic acid metabolism, explain the following: (10)
  - a) RNA polymerase
  - b) Transcription unit
  - c) Transcription termination
  - d) Post transcriptional modification

### III Short Answers

Answer all the questions.

- 1) Write short notes on the chemical classification and functions of amino acids. (5)
- 2) Write short notes on the following: (5)
  - a) Catabolism of IMP
  - b) Components of electron transport chain
- 3) A patient was diagnosed with Ochronosis. Identify the disorder associated indicating the enzyme involved, biochemical manifestations, diagnosis and treatment for the same. (5)
- 4) Sketch the Krebs-Henseleit cycle. (5)
- 5) Define  $\beta$ -oxidation. Write about the oxidation reactions occurring in the mitochondria during  $\beta$ -oxidation proper. Add a note on the number of ATPs generated when Palmitic acid undergoes last cycle of  $\beta$ -oxidation proper. (5)
- 6) Define enzymes. Enlist any four properties of enzymes and write briefly on their nomenclature. (5)
- 7) Define the terms  $K_m$  and Enzyme kinetics. Draw the Lineweaver Burk plot. (5)

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