

Question Paper

Exam Date & Time: 11-Jun-2018 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES
END SEMESTER THEORY EXAMINATIONS - JUNE 2018

PROGRAM: BPHARM SEMESTER 2

DATE: 11/06/2018

TIME: 10:00 AM - 1:00 PM

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 test which is specific for all carbohydrates is (1)
[Molich's test](#) [Seliwanoff's test](#) [Jaffe's test](#) [Zak's test](#)
- 3) Power house of the cell is (1)
[Lysosome](#) [Ribosome](#) [Mitochondria](#) [Nucleus](#)
- 4) Example of an essential fatty acid is (1)
[Linoleic acid](#) [Palmitic acid](#) [Stearic acid](#) [Valeric acid](#)
- 5) Check the odd one out with respect to gluconeogenesis (1)
[Glycerol](#) [Pyruvate](#) [Propionate](#) [Thiamine](#)
- 6) Rotenone is a/an (1)
[Fish poison](#) [Uncoupler](#) [Antibiotic](#) [Electrolyte](#)
- 7) The number of ATPs generated per NADH + H⁺ transported to mitochondria by glycerol phosphate shuttle is (1)
[6](#) [8](#) [2](#) [3](#)
- 8) Rotary Motor model of ATP generation was proposed by (1)
[Paul Boyer](#) [Emil Fisher](#) [Peter Mitchell](#) [Edward Slater](#)
- 9) The number of acetyl CoA produced when Palmitic acid undergoes complete oxidation is (1)
[16](#) [02](#) [129](#) [08](#)
- 10) Ketone bodies are not utilized in the liver because of the absence of the enzyme (1)
[HMG CoA synthase](#) [Thiophorase](#) [β-hydroxybutyrate dehydrogenase](#) [HMG CoA lyase](#)
- 11) Tyrosinemia type II is also known as (1)
[Richner Hanhart syndrome](#) [Tyrosinosis](#) [Phenylketonuria](#) [Alkaptonuria](#)
- 12) The rate limiting step in Urea cycle is (1)
[Synthesis of Carbamoyl phosphate](#) [Formation of Citrulline](#) [Synthesis of arginosuccinate](#) [Cleavage of arginosuccinate](#)
- 13) 10 nm fiber is found in (1)
[Golgi complex](#) [Nucleosome](#) [Endoplasmic reticulum](#) [Plasmodesmata](#)
- 14) Which of the following is NOT a feature of tRNA? (1)
[tRNA has a clover leaf structure](#) [The amino acid is carried on the 5' terminal of the acceptor arm](#) [Unusual bases are found on D and TΨC arm](#) [Variable arms differentiates classes of tRNA](#)
- 15) Which of the following is appropriate for RNA? (1)
[Follows Chargaff's rule](#) [Always double stranded helix](#) [Uracil is the pyrimidine base](#) [Does not answer orcinol colour reaction](#)
- 16) The process which is NOT a post transcriptional modification is : (1)
[5' capping](#) [3' tailing](#) [Splicing](#) [Covalent modifications](#)
- 17) A specialized form of irreversible inhibition is (1)
[Competitive inhibition](#) [Non-competitive inhibition](#) [Allosteric inhibition](#) [Suicide inhibition](#)
- 18) The enzymes that hold metal ions tightly are commonly known as (1)
[Metalloenzymes](#) [Isoenzymes](#) [Holoenzymes](#) [Metal activated enzymes](#)
- 19) The non-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)
[Line weaver burk](#) [Michaelis Menten](#)

II Long Answers

Answer all the questions.

- 1) Mention the synonyms for Krebs cycle and sketch the reactions. Add a note on its energetics. (10)
- 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.

- 1) Define the terms redox potential and bioenergetics. Draw the ATP-ADP cycle. (5)
- 2) Write short notes on the following: (5)
 - a) Salvage pathway for purine nucleotide biosynthesis
 - b) Rotary motor model of ATP generation
- 3) Give the enzyme defect, clinical manifestations, diagnosis and treatment associated with phenylketonuria. (5)
- 4) Write short notes on the regulation, energetics and disorders of urea cycle. (5)
- 5) What are ketone bodies? Explain the process of ketogenesis. (5)
- 6) What are enzyme inhibitors? Explain briefly on competitive inhibition. (5)
- 7) Explain the role of temperature and substrate concentration on enzyme activity. (5)

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