

Royal College of Arts, Science & Commerce
Sample Questions
TYBSc Semester V
Microbiology Paper III (USMB 503)

Note: Each multiple choice question in section I carries 1 mark.
Each multiple choice question in section II & III carries 2 marks.

Section I

- Q.1 _____ is the simplest phospholipid
- i) Phosphatidyl ethanolamine
 - ii) Phosphatidyl serine
 - iii) Cardiolipid
 - iv) Phosphatidic acid
- Q.2 Lipid bilayer is freely permeable to
- i) Small hydrophobic molecules
 - ii) Ions
 - iii) Disaccharides
 - iv) Protons
- Q.3 _____ is the terminal oxidase of mitochondrial ETC.
- i) Cytochrome bo complex
 - ii) Cytochrome bd complex
 - iii) Cytochrome bc complex
 - iv) Cytochrome aa₃ complex
- Q.4 Identify the structure of lactic acid.
- i) $\text{CH}_3\text{CHOHCOOH}$
 - ii) $\text{CH}_3\text{COCO}_2\text{H}$
 - iii) $\text{CH}_2=\text{CH}-\text{CO}_2\text{H}$
 - iv) $\text{CH}_3\text{CH}_2\text{CO}_2\text{H}$
- Q.5 _____ is a homofermenting lactic acid bacteria.
- i) Streptococcus
 - ii) Leuconostoc
 - iii) Bifidobacterium
 - iv) Propionibacterium

Section II

- Q.1 Facilitated diffusion
- i) is an uphill process
 - ii) is a downhill process
 - iii) is energy dependent
 - iv) is mediated without involvement of carrier protein

- Q.2 Na K ATPase is inhibited by _____
- i) Phosphate
 - ii) Vanadate
 - iii) Acetate
 - iv) Sulfate
- Q.3 Redox potential of flavoproteins varies between
- i) -0.15 V to +0.45 V
 - ii) 0 V to +0.45 V
 - iii) -0.65 V to +0.45 V
 - iv) -0.65 V to +0.10 V
- Q.4 How many NAD(P)H are produced by anaerobic TCA per molecule of acetyl CoA used?
- i) Three
 - ii) Four
 - iii) Zero
 - iv) Two
- Q.5 _____ catalyze conversion of acetyl CoA to ethanol.
- i) Aldehyde dehydrogenase & Pyruvate carboxylase
 - ii) Aldehyde dehydrogenase & alcohol dehydrogenase
 - iii) Alcohol dehydrogenase & Pyruvate carboxylase
 - iv) Pyruvate carboxylase & pyruvate dehydrogenase

Section III

- Q.1 *E.coli* dominantly uses _____ in presence of DMSO as the final electron acceptor.
- i) MQ
 - ii) DMQ
 - iii) UQ
 - iv) PQ
- Q.2 Enzyme II of PTS for glucose transport in bacteria consists of
- i) EIIA & EIIBC
 - ii) EIIA, EIIB and EIIC
 - iii) EIAB & EIICD
 - iv) EII AB & EIIC
- Q.3 Identify the inhibitor of ATPase
- i) Venturicidin
 - ii) Cyanide
 - iii) Amytal
 - iv) Carbon mono oxide
- Q.4 Conversion of Isocitrate to succinyl CoA involves:
- i) Isocitrate dehydrogenase and succinyl CoA synthetase
 - ii) Isocitrate dehydrogenase and Cis aconitase

- iii) Isocitrate dehydrogenase and α -ketoglutarate dehydrogenase
- iv) Isocitrate dehydrogenase and Succinate dehydrogenase

Q.5 _____ molecules of ATPs are formed per molecule of butyric acid produced by Clostridium.

- i) 2
 - ii) 2.5
 - iii) 3
 - iv) 5
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