

## CSIR NET 2018 DECEMBER

298. Which one of the following statements is true?

- (a) The specific rotation of enantiomers will be identical
- (b) The rate constant of a first order reaction has only time but not concentration units
- (c) The value of  $\text{pH} + \text{pOH}$  depends on temperature
- (d) The bond dissociation energy (kJ/mol) of  $\text{C}-\text{C}$  will be greater than  $\text{C}=\text{C}$

299. Which one of the following statements on "protein conformation" is NOT true?

- (a) Dihedral angles of side-chains in amino acids are depicted in the Ramachandran plot
- (b) Infrared spectroscopy can be used to deduce hydrogen bonding in peptides
- (c) Three dimensional structures of protein can be obtained by composed nuclear magnetic resonance spectroscopy and  $\beta$ -sheet
- (d) Globular proteins

300. Choose the correct answer from the following components

- (a) In the biosynthesis of palmitate, all the carbon atoms in biosynthesis are derived from activated malonate
- (b) The amino acids Met, Thr, Lys, Ile, Val and Leu are biosynthesized from oxaloacetate and pyruvate in most bacteria
- (c) Alanine is a major precursor for the biosynthesis of porphyrin
- (d) Tryptophan is converted to L-DOPA in the biosynthesis of epinephrine

301. Which one of the following statements on nucleic acids are NOT true?

- (a) The conformation of ribose in DNA is  $\alpha$ -D-2-deoxy-D-ribofuranose

(b) Hydrolysis of RNA takes place under alkaline conditions unlike DNA, as the 2'-hydroxyl in RNA acts as a nucleophile in an intramolecular displacement

(c) DNA can occur in different three-dimensional forms

(d) In DNA, deamination of cytosine to uracil occur in a non-enzymatic manner

302. Following are statements on  $\beta$ -turns:

A. All the 20 coded amino acids have equal propensity to form

B. Pro cannot occur in  $\beta$ -turns

C. Pro-Gly sequence strongly favors  $\beta$ -turns

D. In Asn-Gly  $\beta$ -turns, Asn can have positive  $\phi$  values

Choose the combination with all correct statements

(a) B,D

(b) A, C

(c) A,D

(d) C, D

303. DNA melting temperature ( $T_m$ ) was found to be 47°C and enthalpy measured at  $T_m$  was 0.032 kJ. The entropy change would be:

(a)  $1 \times 10^{-3}$ kJ

(b)  $1 \times 10^{-4}$ kJ

(c)  $3 \times 10^{-2}$ kJ

(d)  $6 \times 10^{-2}$ kJ

304. Match the following bonds with their approximate energies:

A. Hydrogen bond	(i) 0.5 Kcal
B. Van der Waals forces	(ii) 40 Kcal
C. Covalent bond	(iii) 80 Kcal
D. Ionic bond	(iv) 3 Kcal

(a) A-(iv), B-(iii), C-(ii), D-(i)

(b) A-(ii), B-(i), C-(iii), D-(iv)

(c) A-(i), B-(iv),

(d) A-(iv), B-(i),

305. The following are some statements regarding glycolysis:

A. Glycolysis is not regulated by pyruvate kinase

B. Lactate can be an end product of glycolysis

C. Glycolysis cannot function anaerobically

D. In erythrocytes, the second site in glycolysis for ATP generation can be bypassed  
From the above, choose the combination with both  
INCORRECT: statements.

(a) A and B

(b) B and D

(c) C and D

(d) A and C

306. For a reversible non-competitive inhibition of an enzyme. choose the plot that you would use to determine  $K_m$

