



**GCP-1246**

Seat No. \_\_\_\_\_

**B. Sc. (Sem. II) Examination**

**April / May - 2017**

**Biotechnology**

*(Core Compulsory) (CCC I - II)*

*(CBT - I - II Molecules of Life)*

Time : 3 Hours ]

[ Total Marks : 70

1 MCQ and one word questions : 15

(1) Choose the correct statements

P. All monosaccharides are reducing sugar

Q. All disaccharides having head to a condensation are reducing sugar

R. ascorbic acid is an aldonic acid

S. sucrose is dextrorotatory

(A) P, Q (B) Q, R

(C) P,Q,R (D) P, Q, R, S

(2) pH of buffer solution depends upon concentration of

(A) acid ( $H^+$  -)

(B) conjugate base ( $-OH^-$ )

(C) Salt

(D) both (A) and (B)

(3) pH can be kept constant with help of

(A) Saturated solution

(B) Unsaturated solution

(C) Buffer solution

(D) Super saturated solution

- (4) Buffers present in blood contain
- (A)  $HCO_3^-$  (B) Hemoglobin  
 (C)  $H_2PO_4^-$  (D) All of them
- (5) Henderson's equation can be represented as
- (A)  $pH = PKa + \log \{Acid\}/[Salt]$   
 (B)  $pH = PKa + \log [Salt]/[Acid]$   
 (C)  $PKa = pH + \log [Salt]/[Acid]$   
 (D)  $PKa = pH - \log [Salt]/[Acid]$
- (6) Which of the following properties is not related to water ?
- (A) high dielectric constant  
 (B) dipolar nature  
 (C) has bond angle of  $104.5^\circ$   
 (D) low heat of vaporization
- (7) A nucleotide consists of
- (A) A nitrogenous base like choline  
 (B) Purine + pyrimidine base + sugar + phosphorous  
 (C) Purine or pyrimidine base + sugar  
 (D) Purine or pyrimidine base + phosphorous
- (8) A purine nucleotide is
- (A) AMP (B) UMP  
 (C) CMP (D) TMP
- (9) A pyrimidine nucleotide is
- (A) GMP (B) AMP  
 (C) CMP (D) IMP

- (10) The approximate number of nucleotides in tRNA molecule is
- (A) 25 (B) 50  
(C) 75 (D) 100
- (11) \_\_\_\_\_ is fat soluble vitamins
- (A) Biotin (B) Thiamin  
(C) Vitamin K (D) All of these
- (12) \_\_\_\_\_ fatty acid are responsible for solidify of fats in cold weathers.
- (A) Saturated  
(B) Unsaturated  
(C) (A) and (B) both  
(D) None of these
- (13) Which metal ion present in Hemoglobin of human ?
- (A) Mn (B) Zn  
(C) Fe (D) Cu
- (14) Give the protein name which is abundant in animal kingdom.
- (15) \_\_\_\_\_ are amphoteric in nature use in protein structure.

2 Answer the following : (any five)

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- (1) Explain the H.H. equation with significance
- (2) Write a note on Vitamins
- (3) Write a note on Buffer
- (4) Explain the double stranded helix structure of DNA
- (5) Explain the structure of tRNA
- (6) Write a note on disaccharide
- (7) Write a note on simple lipid with importance

3 Answer the following : (any two)

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- (1) Explain water is universal solvent.
  - (2) Explain the structure of protein.
  - (3) Explain the various forms of DNA
  - (4) Write a note on monosaccharide classification.
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