

**Royal College of Arts, Science & Commerce**  
**Sample Questions**  
**SYBSc Semester III**  
**Microbiology Paper I (USMB 301)**

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 Cruciform structure is formed by
- i) Palindromic sequence of DNA
  - ii) Mirror sequence of DNA
  - iii) Quadruplex DNA
  - iv) Triplex DNA
- Q.2 A nucleoside consists of
- i) A sugar and a PO<sub>4</sub> group
  - ii) A base and a PO<sub>4</sub> group
  - iii) A sugar, a base and a PO<sub>4</sub> group
  - iv) A sugar and a base
- Q.3 DNSA method is used for
- i) Total sugar estimation
  - ii) Polysaccharide estimation
  - iii) Reducing sugar estimation
  - iv) Non reducing sugar estimation
- Q.4 C estimation is done by
- i) Microkjeldahl method
  - ii) Fiske and Subbarow method
  - iii) Soxhlet method
  - iv) Van Slyke's method
- Q.5 The organisms showing more than 70% hybridization of their DNA are assigned a common
- i) Family
  - ii) Genus
  - iii) Species
  - iv) Strain

**Section II**

- Q.1 The bond between  $\alpha$ ,  $\beta$  and  $\beta$ ,  $\gamma$  phosphate groups of ATP is high energy
- i) Acyl ester bond
  - ii) Glycosidic bond
  - iii) Phosphoanhydride bond
  - iv) Thioester bond

- Q.2 The negative supercoiling of the DNA helix
- reduces linking number
  - increases linking number
  - doubles linking number
  - has no effect on linking number
- Q.3 0.05% sugar concentration is equivalent to
- 5000mcg/ml
  - 500mcg/ml
  - 50mcg/ml
  - 5mcg/ml
- Q.4 Which of the following is not a function of n butanol in RNA estimation by Orcinol method
- Prevention of FeCl<sub>3</sub> ionization
  - Dissolution of precipitate
  - Colour stabilization
  - Catalysis
- Q.5 DNA finger printing is done by
- DNA hybridization
  - PCR
  - RFLP
  - DNA denaturation technique

### Section III

- Q.1 'A' form of DNA has
- C-3' endo pucker
  - C-2' endo pucker
  - C-3' exo pucker
  - C-2' exo pucker
- Q.2 Which of the following statements is not true with respect to topoisomerase II
- It causes single stranded nick in DNA
  - It induces under winding of DNA
  - It causes DNA super coiling
  - It is associated with DNA scaffold
- Q.3 The red precipitate formed in Fehling's method is due to
- reduction of Cu<sup>++</sup> to Cu<sup>+</sup>
  - oxidation of Cu<sup>+</sup> to Cu<sup>++</sup>
  - formation of copper tartarate complex
  - Reduction of glucose
- Q.4 The solvent used in lipid extraction is
- CHCl<sub>3</sub> : Methanol in 4:1 ratio
  - CHCl<sub>3</sub> : Methanol in 3:1 ratio
  - CHCl<sub>3</sub> : Methanol in 2:1 ratio
  - CHCl<sub>3</sub> : Methanol in 1:1 ratio

Q.5 According to Whittaker, protista are characterized by \_\_\_\_\_

- i) holozoic nutrition
- ii) saprozoic nutrition
- iii) varied modes of nutrition
- iv) autotrophic nutrition

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