

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

FIRST YEAR

B.A./B.SC. FIRST SEMESTER (July – December), 2011

Mid-Semester Examination, September, 2011

Date : 12/09/2011

MICROBIOLOGY (Honours)

Time : 11 am – 1 pm

Paper : I

Full Marks : 50

Group – A

1. a) What do you mean by primary and secondary data?
b) What do you mean by multiple bar diagram and component bar diagram?
c) What is sampling? [2+2+1]

Or,

 - a) Mention the different parts of a statistical table.
 - b) What are relative frequency and frequency density?
 - c) What is pictogram? [2+2+1]
2. a) What is Abiogenesis?
b) Write two exceptions of Koch's postulates.
c) What is Chemotherapy?
d) Write the contributions of Louis Pasteur in Microbiology. [1+2+1+2]

Or,

 - a) What is a dendrogram?
 - b) How does Karl Woese classify living kingdom into three domains?
 - c) State the characters used by H. Whittaker to classify organisms. [1+3+2]
3. a) Write down the structure and function of teichoic acid.
b) What is LPS? Write down its significance.
c) What is porin?
d) Briefly describe fluid mosaic model of cell membrane. [3+(1+2)+1+2]

Group – B

4. a) State the process of staining bacterial endospore.
b) Differentiate between a stain and a chromogen.
c) Name the mordant used in flagella staining. [5+2+1]

Or,

 - a) How can bacterial capsule be stained?
 - b) Differentiate between an Auxochrome and a Chromophore.
 - c) Basic stain work better in basic pH —Justify. [4+2+2]
5. a) Define polyprotic acids. Explain with proper examples.
b) What will be the concentration of H^+ ion at pH = 2 and pH = 10?
c) Write a short note on hydrophobic interaction. Explain with proper example.
d) What are the concentration of H^+ , OH^- and pOH of a 0.002 M solution of HNO_3 ?
e) Define Buffer. What are the different types of buffer? Explain each type with proper examples. [(1+1)+2+3+3+5]
6. a) Write down the R-S configuration of α -D-Glucose.
b) Prove that $S_2 = i$
c) What are the basic difference between stereogenicity and Chirotopicity? Explain with examples.
d) Draw the chair conformation of Cyclohexane. [2+2+2+1]