

VPM's B.N. Bandodkar College of Science, Thane  
IV<sup>th</sup> Semester End Examination March 2017  
S.Y.BSc. Biochemistry USBCH 401

Duration: 2 hrs and 30 mins.

MaxMarks-75

- N.B
- 1) All Questions are compulsory.
  - 2) Draw neat and labeled diagrams wherever necessary.
  - 3) Figures to right indicate full marks.

Q.1) Answer the following .( Each question carries 4 marks)

20

a) Explain Vant-Hoffs law of osmotic pressure.

OR

a) Explain Molality and Normality for expressing the solute concentration.

b) What is viscosity? Explain factors affecting viscosity.

OR

b) Write a note on distribution of solute between two immiscible solvents.

c) What is diffusion? Give physiological role of diffusion.

OR

c) Explain Donnan membrane equilibrium.

d) Write a note on Ostwald's viscometer.

OR

d) How will you determine surface tension of liquid?

e) Explain role of osmosis in physiology.

OR

e) Explain the physiological importance of surface tension.

Q.2) Answer the following. ( Each question carries 4 marks)

20

a) Describe any one method for protein purification.

OR

a) Explain two separation techniques of biochemical investigation.

a) Which are the methods of cell disruption?

OR

b) Write the applications of purified proteins.

c) What are the general approaches of biochemical investigation?

OR

d) Write a note on suspension medium.

d) Explain the autoradiography technique.

OR

d)What are radioactive isotopes? Explain its significance in biochemical investigation.

e) Explain Drosophila and Mice as models for biochemical investigation.

**OR**

e) Write the sites where proteins can be found?

**Q.3) Answer the following. ( Each question carries 4 marks)**

**20**

a) Describe the principle and working of fluorescent microscopy.

**OR**

a) Explain the various stains used in bright field microscopy.

b) Enlist the parts of compound microscope and their functions.

**OR**

b) Differentiate between bright field and dark field microscopy.

c) Explain the construction of confocal microscopy.

**OR**

c) Discuss the advantages and limits of oil immersion microscopy

d) Give the advantages and disadvantages of electron microscope.

**OR**

d) Draw a neat and labeled diagram of a compound microscope.

e) Describe the principle of electron microscopy.

**OR**

e) Discuss the principle and working of a dark field microscope.

**15**

**Q.4) A) Answer the following.(Each question carries 3 marks)**

a) Explain the colloidal state and phases of colloids.

**OR**

a) What is surface tension? Explain factors affecting surface tension

b) Explain the limitation of cell disruption.

**OR**

b) Enlist any two advantages of E coli as a model system.

c) Calculate the magnification if 45X objective is used with 20X eyepiece lens.

**OR**

c) Explain the term limit of resolution.

**Q.4) B) Answer the following. (Each question carries 2 marks)**

a) What is flocculation?

**OR**

a) Write any two functions of colloids.

b) What is biochemical investigation?

**OR**

b) Explain Guinea pigs as animal model.

c) Name any 2 disadvantages of direct immunofluorescence.

**OR**

c) Give the function of condenser in a compound microscope.