

DATE: 23RD MARCH 2023

TIME: 1.30 P.M. – 4.30 P.M.

Part B – Short Answer Question (20 Marks)

1.

1.1 What is drug-photolysis? (04 marks)

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1.2 What are the three (03) types of simple elementary reactions? (03 marks)

i.....
ii.....
iii.....

1.3 What are the three (03) types of thermodynamic equilibriums? (03 marks)

i.....
ii.....
iii.....

2.

2.1 What is osmosis? (04 marks)

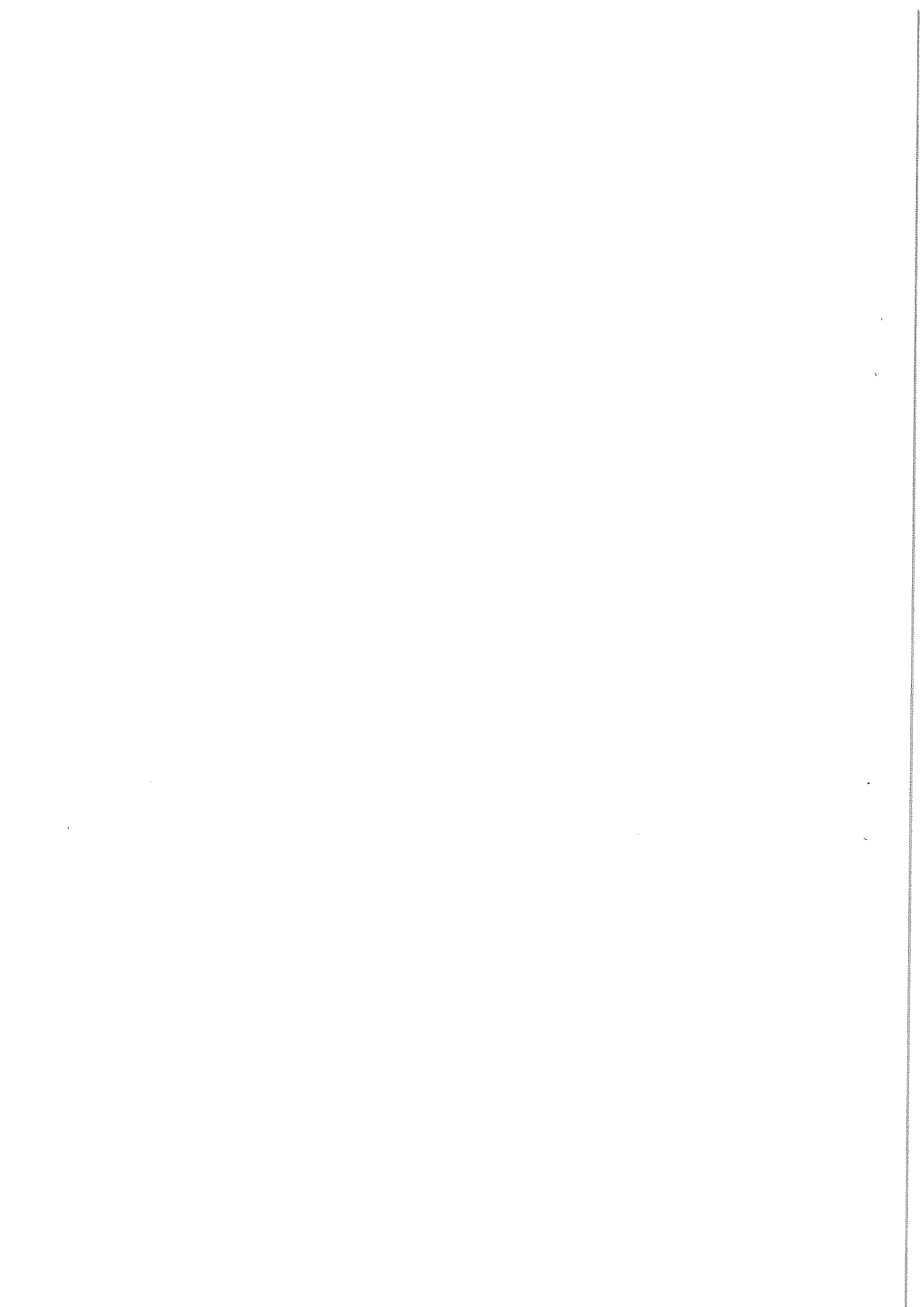
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2.2 List three (03) methods to determine the interfacial and surface tension. (03 marks)

i.....
ii.....
iii.....

2.3 Using an Ostwald viscometer, acetone was measured and found to have a viscosity of 0.313 cp at 25 °C. Its density at 25 °C is 0.788 g/cm³. What is the kinematic viscosity of acetone at 25 °C? (03 marks)

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Part C – 04 Structured Essay Questions (60 Marks)

1.
 - 1.1. List three (03) parameters for the characterization of solids in terms of porosity. (03 marks)
 - 1.2. State four (04) methods to estimate the particle size. (04 marks)
 - 1.3. Discuss the applications of micrometrics in Pharmacy. (08 marks)
2.
 - 2.1. List four (04) distinguishing features of colloidal dispersion. (02 marks)
 - 2.2. List the three (03) kinetic and two (02) optical properties of colloidal dispersions. (05 marks)
 - 2.3. Describe the properties of an ideal suspension briefly. (08 marks)
3.
 - 3.1. Write four (04) advantages of emulsions. (04 marks)
 - 3.2. Describe the first law of thermodynamics. (05 marks)
 - 3.3. Compare the steady-state diffusion and non-steady-state diffusion. (06 marks)
4.
 - 4.1. State three (03) theories to define the dissolution process. (03 marks)
 - 4.2. Calculate the HLB value of the binary mixture of surfactant A and B. (HLB_A : 4.3 and HLB_B : 4.7. Weight of A and B is 4 g and 6 g respectively). (06 marks)
 - 4.3. Describe briefly the addition polymerization process. (06 marks)

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