

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END-SEMESTER EXAMINATION)**

**CLASS: BPHARM  
BRANCH: PHARMACY**

**SEMESTER: V  
SESSION: MO/19**

**SUBJECT: BP502T INDUSTRIAL PHARMACY-I**

**TIME: 3.00 Hours**

**FULL MARK: 75**

**INSTRUCTIONS:**

1. The missing data, if any, may be assumed suitably.
  2. Before attempting the question paper, be sure that you have got the correct question paper.
  3. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
  4. This question paper consists of (03) three parts. Read the part wise instructions before attempting the questions.
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**PART-I**

**Objective types questions (Instruction: Answer all questions)**

Q1. (10 x 2 = 20 Marks)

- A. Define Preformulation study.
- B. Compute the Angle of repose for a powdered drug which when passes through a hopper occupies 4cm diameter on a plane surface from a height of 10cm.
- C. Discuss briefly the method for determination of surface area of a drug and also provide the formula for specific surface area of a drug.
- D. Explain the terms: i) Rat Holing            ii) Mottling
- E. Recommend appropriate analytical instruments used for following:  
    i) Thermal studies    ii) Detection of Function groups    iii) Detection of Structural properties of a drug  
    iv) Determination of Particle size
- F. Explain the application of cosolvents along with some examples for both aqueous and nonaqueous cosolvents
- G. Calculate the HLB value of a emulsifier blend where 20% of emulsifier A (HLB 2.0) and 80% of emulsifier B (HLB 4.0) are used.
- H. Explain what are ocuserts.
- I. Explain why is it necessary to maintain the isotonicity of sterile preparations.
- J. Explain the importance of bulking agents in parenterals.

**PART-II**

**Short Answers**

**(Instruction: Answer seven out of nine questions)**

(7 x 5 = 35 Marks)

- Q2. Discuss the evaluation of Tablets.
- Q3. Explain the factors which affect the absorption of a drug.
- Q4. Discuss the DLVO theory w.r.t suspension stabilization.
- Q5. Explain the differences between Flocculated and deflocculated suspension.
- Q6. Explain the theory of emulsification.
- Q7. Compute and predict the appropriate name for the following propellants:  
    (i) Dichlorodifluoromethane    (ii) Dichlorotetrafluoroethane    (iii) Dichloromonofluoromethane  
    (iv) Tetrafluoroethane    (v) Heptafluoropropane
- Q8. Estimate the vapour pressure of a 70:30 mixture of Propane and Isobutane.

Compounds	Molecular Weight	Boiling Point(°C)	Vapour Pressure(Psig)
Isobutane	58.1	10.9	30.4
Propane	44.1	-43.7	110

Q9. Discuss the compounding and packaging of oral liquid preparation.

Q10. Write short notes on Pellets.

PTO

**PART-III**  
**Long Answers**  
**(Instruction: Answer two out of three questions)**

(2 x 10 = 20 marks)

- Q11. Discuss in detail the evaluation of aerosols.
- Q12. Discuss in details the evaluation of emulsion.
- Q13. Discuss the details the preparation of hard gelatin Capsule shells. Also discuss the preparation of soft gelatin capsules. What do you understand by Bloom strength and what should be the optimum value of bloom strength and viscosity of gelatin mass ? State the different ratios of glycerol as plasticizers used for the preparation of capsules.

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