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

CLASS: B.PHARM **SEMESTER: III**
BRANCH: PHARMACY **SESSION:MO-2024**

SUBJECT: BP302 T PHYSICAL PHARMACEUTICS

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.**

PART-I
Objective types of questions (Instruction: Answer all questions)

Q1. (10 x 2 = 20 Marks)

A. What is Buffer Capacity?
B. Explain the process of liquefaction of gases.
C. State the limitations of Raoult's Law.
D. Define Vapour pressure.
E. Define Surface tension and Interfacial Tension.
F. What are clathrates?
G. Define adsorption isotherm.
H. Explain the term detergency
I. What are aerosols? Give two examples of aerosols

PART-II
Short Answers
(Instruction: Answer seven out of nine questions)

(7 x 5 = 35 Marks)

Q2. Explain critical solution temperature and mention its applications.
Q3. Define dielectric constant. Write a note on its application in pharmacy.
Q4. Write down the calorimetric method of pH determination.
Q5. Explain the solubility of partially miscible liquids with the help of a suitable example.
Q6. Discuss Langmuir adsorption isotherm.
Q7. Discuss Protein binding with the help of examples.
Q8. What is the mechanism of cyclodextrin drug inclusion complexes? Discuss its applications.
Q9. What are eutectic mixtures. Give two examples.
Q10. Write a note on the application of buffers in pharmaceutical and biological systems.

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

(2 x 10 = 20 marks)

Q11. Enlist the various physical properties of drug molecules. Discuss any two of them with suitable example.
Q12. Define Surface tension. Explain the principle involved in determination of surface tension by capillary rise method.
Q13. What do you mean by complexation? Enlist the various methods used for analysing complexes. Explain in detail the distribution method of complex analysis.

::::::20/11/2024::::::E