

Roll No.: _____

Enrolment No. _____

PARUL UNIVERSITY

PARUL INSTITUTE OF PHARMACY AND RESEARCH

B.PHARM THIRD SEMESTER

SECOND INTERNAL THEORY EXAMINATION: 2021-22

Subject Name: Physical Pharmaceutics-I

Subject Code: BP302T

Time: 2.00 pm to 3.15 pm

Date: 27.08.2021

Total Marks: 30

Instructions:

1. Figures to the right indicate full marks.
2. Make suitable assumptions wherever necessary.

Q.1 Multiple Choice Questions:

- | | | |
|------|---|----|
| (1) | Surface tension is defined as the change in the surface free energy per unit change in
(a) area (b) density (c) Length (d) Volume | 01 |
| (2) | Solid/Solid interfaces are important in
(a)emulsions (b) pastes (c)suspensions (d) tablets | 01 |
| (3) | Near critical micelle concentration CMC, micelles of the surfactant molecules assume the shape of
(a) cylindrical (b) layered (c) rod shaped (d) spherical | 01 |
| (4) | Optical activity is an important structural requirement for estimating one of the properties
(a) Dielectric constant (b) polarizability (c) Refractive index (d) specific rotation | 01 |
| (5) | What is the important factor influencing the measurement of refractive index
a) concentration (b) volume (c) pressure (d) wavelength of light | 01 |
| (6) | Which techniques uses sodium vapor lamp as a source of light?
a) Dielectric constant (b) Optical rotation (c) refractive index (d) Both b& c | 01 |
| (7) | Which of the following does not obey group contribution method
a) Additive property (b) Colligative property (c) Dissociation constant (d) Partition coefficient | 01 |
| (8) | What is the pressure of gas in the aerosol system?
a) 100mPa (b) 150 Pa (c) 550kPa (d) 550MPa | 01 |
| (9) | The component of the aerosol system responsible for expelling the contents
a) Actuator. (b) Drug product (c) Propellant (d) Valve | 01 |
| (10) | The surfactants having HLB value in the range of 13-16 are termed as
a) wetting agents (b) detergents (c) solubilizing agents (d) emulsifiers | 01 |

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Q.2 Long Answers: (Any One)

- 1) Define HLB. Draw a neat diagram of HLB scale. Explain different methods to determine HLB of surfactants. **10**
- 2) Define Refractive index and molar refractive index. Explain the working of Abbe's refractometer with diagram. Enlist the application of molar refractive index. **10**

Q.3 Short Answers: (Any Two)

- 1) What are aerosols? Explain the working of aerosols with diagram. **05**
- 2) Derive Ideal gas equation and explain in short its application in pharmacy. **05**
- 3) Differentiate between surface tension and interfacial tension with suitable examples. **05**