16353(J) ⟶ᴶ⁻ᶦ⁶

B. Pharmacy 2nd Semester Examination

Physical Pharamacy-I (CBS)

BP-202

Time : 3 Hours   Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Answer one question each from section ABCD, and section E is compulsory.

SECTION - A

1. Discuss Kinetic Molecular Theory of Gases. What are its assumptions?   (12)

2. Write note on following:

    (a)   Eutectic mixtures   (b)   Aerosols

    (c)   Liquid Crystals   (d)   Liquefaction   (4×3=12)

SECTION - B

3. (a)   What do you understand by Colligative properties? Discuss about various Colligative properties of the solution in detail.   (6)

    (b)   Write note on:

        (1) Parachor   (2) Partition Cofficient   (2×3=6)

4. (a)   Give a brief note on Solubility of Gases in Liquid.   (6)

    (b)   Write note on:

        (1) Asymmetric / Relaxation Effect

        2) Electrophoretic Effect   (2×3=6)

SECTION - C

5. (a)   What are Buffered Isotonic Solutions? Discuss about the Calculations & methods of adjusting isotonicity.   (6)

    (b)   Give Clausius Clapeyron Equation. What are its applications?   (6)

6. (a)   Give procedure for the preparation of pharmaceutical buffer solutions along with their biological applications.   (6)

    (b)   Explain Absolute Temp. Scale along with its Conversion rates.   (6)

SECTION - D

7. What do you understand by "Order of Reaction"? Give derivation for zero and first order along with their $t_{1/2}$.   (12)

8. (a)   Discuss about Stability testing of dosage form by Conventional Arrhenius Approach.   (6)

    (b)   How chemical decomposition affect the Drug Stability? Give preventive measures also.   (6)

SECTION - E

9. (a)   Define Polymorphism.

    (b)   What is Free Energy Function?

    (c)   What are various methods for determination of order?

    (d)   Discuss Pseudo-zero order.

    (e)   Write a short note on Partition Cofficient and log P.

    (f)   What is Heat of formation?

    (g)   Give significance of Henderson- Hasselbalch equation,

    (h)   How can you define shelf life of drugs?

    (i)   Define Mole Fraction.

    (j)   What is Osmotic Pressure?

    (k)   What is meant by chemical degradation of drug?

    (l)   Give applications of Chemical Kinetics.   (12×1=12)