**Sardar Bhagwan Singh University, Dehradun**

**School of Pharmaceutical Sciences & Technology**

**B.Pharm. 8th Semester (PHR805E)**

**Subject: Novel Drug Delivery System**

**Online Assignment 6**

**Total Marks: 30 Submission Time: 6th May; 23:59 pm**

**Instructions:** 1. Section A is a self grading quiz which is to be performed in Google Classroom and Google Forms only. No submission in hard copy is required/accepted for this section. Delay in submitting this section will be negatively marked with each day, i.e. 1 mark for each day delay. No pdf or scanned image will be accepted for evaluation.

2. Maintain a hardcopy of section B and Section C of this assignment with you. It will be required to be submitted when classes will resume in the University.

**SECTION A: SELF GRADING QUIZ (10 MARKS, I MARK EACH) Google Classroom Activity**

1. Cell membrane targeting may be achieved with
2. Folic acid (b) Hyaluronic acid (c) Transferrin (d) All of the above
3. Trans-activating transcriptional activator (TAT) peptide is used to target drugs to
4. Cell membrane (b) Nucleus (c) Mitochondria (d) Golgi apparatus
5. What is predominant mechanism for penetration of drugs in an iontophoretic process?
6. Electrosmosis (b) Electrorepulsion (c) Electroporation (d) Simple diffusion
7. One of the following is a chemical based drug delivery method. Identify it.:
8. Viral vector (b) Magnetoporation (c) Nonviral nanoparticles (d) Modified nanovectors treated with targeting factors
9. Which property of a polymer can be estimated using differential scanning calorimetry?
10. Drug diffusion (b) Particle size distribution (c) Glass transition temperature (d) Morphology of microcapsule
11. Disruption of the strong intermolecular interactions in the crystal is the mechanism responsible for increasing solubility in one of the following prodrug. Identify it.
12. chloramphenicol sodium succinate (b) betamethasone sodium phosphate (c) Prednisone phosphate (d) 5'-formate ester derivative of vidarabine
13. Which one is a non-bitter substance?

(a) Chloramphenicol (b) Chloramphenicol palmitate(c) Chloramphenicol sodium succinate (d) All of the above

1. Which equation governs drug release from microparticles?

(a) Noyes-Whitney equation (b) Hixson Crowell cube root law (c) Higuchi equation (d) All of the above

1. Which apparatus is used for conducting In vitro drug release studies of microcapsules?

(a) USP apparatus 1 (b) USP apparatus 3 (c) USP apparatus 4 (d) USP apparatus 5.

1. A multiparticulate formulation consists of beads with a slowly dissolving polymeric coating of variable thickness. What shall be the mechanism of drug release from multiparticulates.

(a) Diffusion (b) Dissolution (c) Difusion and dissolution both (d) Osmosis

**SECTION B: SHORT QUESTIONS (10 MARKS; 5 MARKS EACH)**

1. Explain mechanisms of various physical approaches for enhancing delivery of drugs ?
2. Describe in brief morphological characterization of microcapsules.

**SECTION C: LONG QUESTION (10 MARKS)**

1. What are different mechanisms of drug release from microparticles? With the help of different equations explain kinetics of drug release from microparticles.