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

**CLASS: M. PHARM.** **SEMESTER : II**
**BRANCH: PHARMACY** **SESSION : SP/19**

**SUBJECT: MPH201T MOLECULAR PHARMACEUTICS**

**TIME: 3:00 Hours** **FULL MARKS: 75**

**INSTRUCTIONS:**
**1. The question paper contains 7 questions each of 15 marks and total 105 marks.**
**2. Candidates may attempt any 5 questions maximum of 75 marks.**
**3. The missing data, if any, may be assumed suitably.**
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
**5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.**

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Q.1(a) Discuss the preparation and characterization of phytosomes. Also, mention its advantages and applications. [7]

Q.1(b) Discuss the methods of preparation and evaluation of Electrosomes. [8]

Q.2(a) Explaining the pathway and mechanism of nasal absorption, describe the factors affecting drug absorption through nasal route. [7]

Q.2(b) Enlisting the applications, describe the preparation of monoclonal antibodies. [8]

Q.3(a) Describe the different classes of Liposomes along with their mechanism of action. [7]

Q.3(b) Describe in detail about the preparation, evaluation and application of microsphere. [8]

Q.4(a) Enumerate the ideal properties of a targeted drug delivery system. Illustrate the rationale for targeted drug delivery system. What are the principle requirements for a successful targeted drug delivery system? [7]

Q.4(b) Cite the advantages of RBC as cell mediated drug delivery system. Construct the design of an ideal Ligand targeted drug with help of a diagram. What are the novel means to determine the specific drug concentration? [8]

Q.5(a) Discuss the following in detail: [7]
(i) Dendrimer.
(ii) Aptamers.

Q.5(b) What are viral and non-viral vectors in gene therapy? Explain the oral route for delivery of gene therapy along with its advantages and limitations. [8]

Q.6(a) State the advantages and limitations of Nanoparticulate drug delivery systems. Generate your ideas on the critical steps that are to be considered in nanoparticle preparation by nanoprecipitation methods. [7]

Q.6(b) What is click chemistry? Explain the strategies that are to be undertaken for a successful targeted gene delivery. [8]

Q.7(a) Differentiate between the following: [7]
(i) Emulsion diffusion method and Salting out method for nanoparticle preparation.
(ii) Distinguish between pinocytosis and Phagocytosis.

Q.7(b) Express your views on receptor expression profile and receptor location in ligand targeted delivery. [8]

**:::::29/04/2019 M:::::**