

**THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY**

**[B.PHARM 0524]**

**MAY 2024**

**Sub. Code: 2089**

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)  
PCI Regulation 2017 - SEMESTER VIII  
PAPER VIII - PHARMACEUTICAL PRODUCT DEVELOPMENT**

***Q.P. Code: 562089***

**Time: Three hours**

**Maximum: 75 Marks**

**I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)**

1. Discuss about QbD (Quality by design) and its application in Pharmaceutical vaccine production.
2. Write briefly about tablets Excipients.
3. Discuss about stability assessment in pharmaceutical product development.

**II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)**

1. Types of factorial designs.
2. Emulsifying agents.
3. Semi solid excipients.
4. Advantages and disadvantages of Glass container.
5. Types of packaging.
6. Polyethylene glycol.
7. Film coating materials.
8. Excipients in microspheres.
9. Non-ionic surfactant.

**III. Short answers on: Answer ALL questions. (10 x 2 = 20)**

1. Types of packaging materials.
2. Advantages of metal containers.
3. Define pre-formulation.
4. Types of suspending agents.
5. Examples for semi solid Excipients.
6. Evaluation test for closures.
7. Directly compressible vehicles.
8. Capsules Excipients.
9. Define optimization.
10. What is meant by directly compressible vehicles?

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