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**MPHARM**  
**(SEM II) THEORY EXAMINATION 2023-24**  
**PHARMACEUTICAL PROCESS CHEMISTRY**

**TIME: 3 HRS****M.MARKS: 75**

**Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A****1. Attempt all questions in brief.****10 x 2 = 20**

a.	Differentiate the polymorphs and hydrates.
b.	What is an extraction technique?
c.	Enlist the type of fires.
d.	Write the uses of Lovastatin.
e.	Recall the factors affecting the process of evaporation.
f.	Write the principle of the scale-up process.
g.	Define the concept of route selection.
h.	What is ozonolysis?
i.	Give examples of nitrating agents.
j.	Differentiate the aerobic and anaerobic fermentation.

**SECTION B****2. Attempt any two parts of the following:****2 x 10 = 20**

a.	Explain the mechanism of nitration with a note on process equipment for technical nitration.
b.	Discuss the types of impurities in API, including genotoxic impurities.
c.	Give a note on i) MSDS (Material Safety Data Sheet) ii) Effluents and its management.

**SECTION C****3. Attempt any five parts of the following:****7 x 5 = 35**

a.	Explain the production process of antibiotic penicillin by fermentation.
b.	Define the types of validation processes of pharmaceuticals.
c.	Write a short note on H <sub>2</sub> O <sub>2</sub> and sodium hypochlorite.
d.	Describe the crystallization process with a discussion of the factors affecting crystallization.
e.	Differentiate the heterogeneous and homogeneous catalytic hydrogenation reactions.
f.	Define the theory of filtration.
g.	Discuss the types of personal protective equipment with uses.