

UNIT -2 PUZZLES

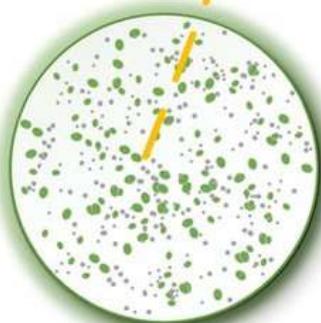
TOPIC: MICROENCAPSULATION

puzzle 1: Identify the Structures

Look at the diagram below showing two common types of microparticles in microencapsulation.

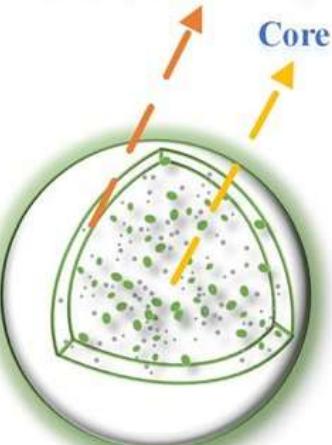
Microparticles

Matrix

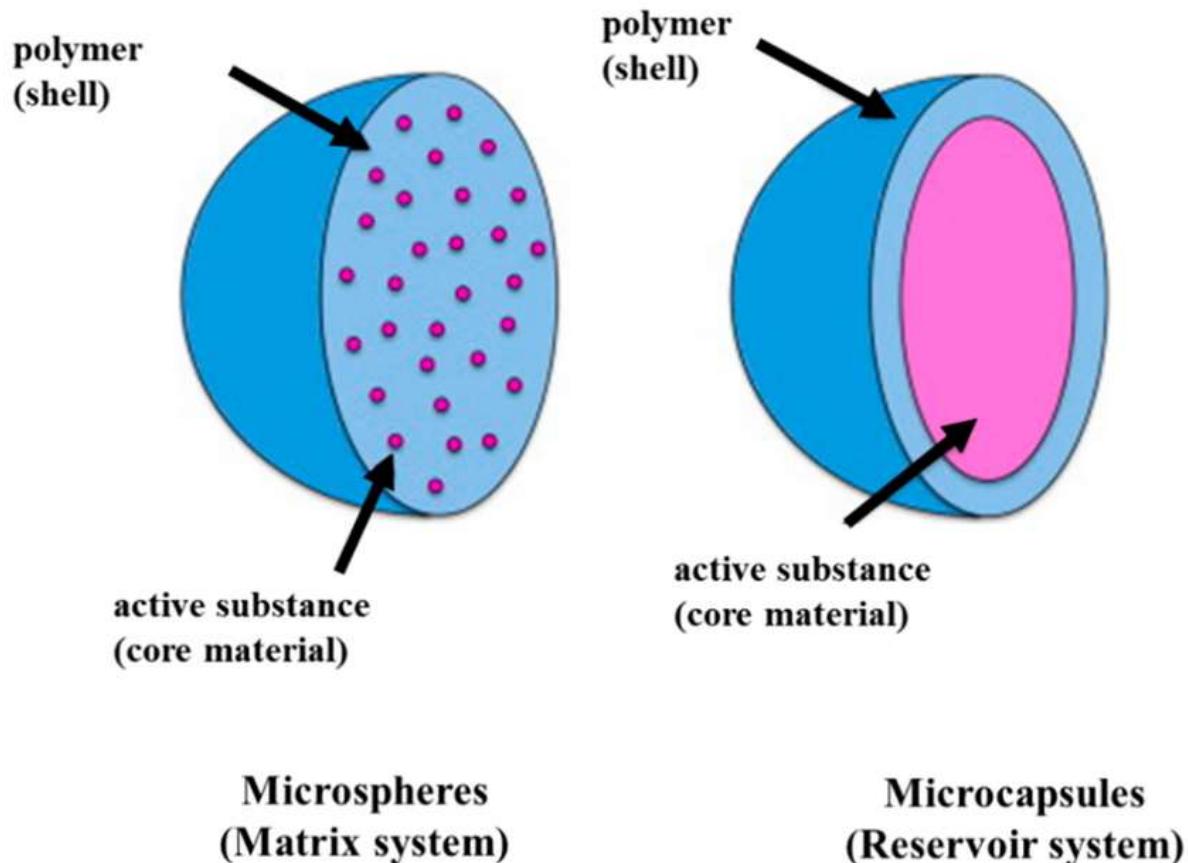


Microsphere

Shell (Chitosan layer)



Microcapsule



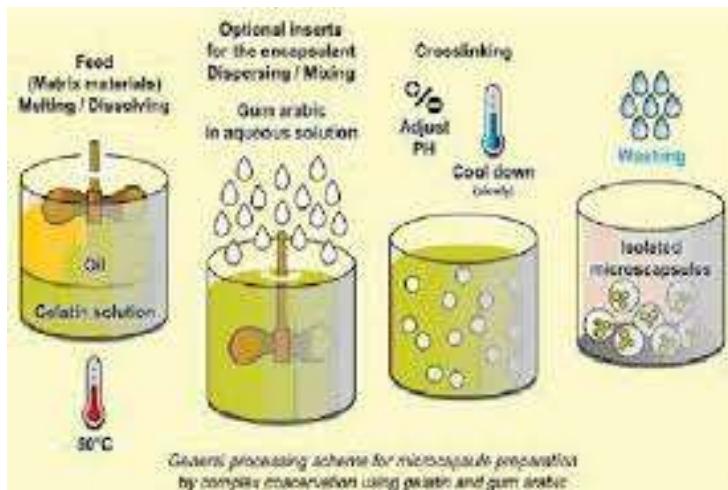
Question: Which structure is a **microcapsule** (reservoir type with distinct core-shell) and which is a **microsphere** (matrix type with active dispersed throughout)? Label them A (left) and B (right) in one of the diagrams.

Puzzle 2: Match the Method to the Diagram

Here are diagrams of popular microencapsulation methods.

Spray Drying Process:

Coacervation Process:



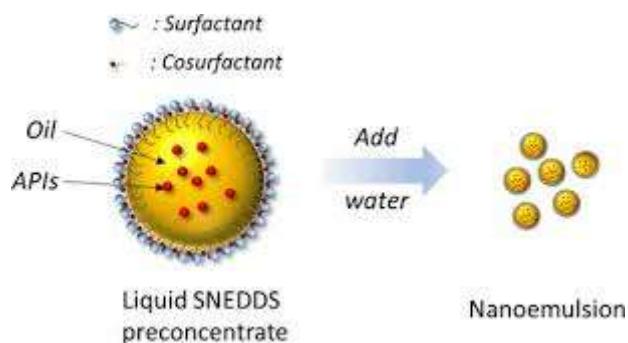
Question: Match the diagrams to the methods:

- Involves atomizing an emulsion into hot air for rapid drying.
- Involves phase separation (e.g., by pH or temperature change) to deposit wall material around the core.

Puzzle 3: Advantages in Action

Diagram showing applications (focus on pharmaceuticals):

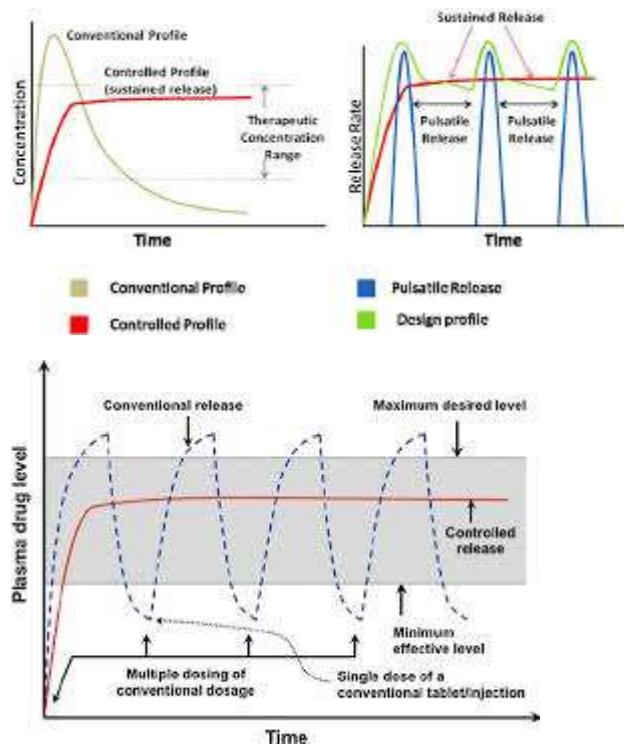




Question: From the applications listed in the diagram, identify three key **advantages** of microencapsulation illustrated here (e.g., in drug delivery).

Puzzle 4: Controlled Release Profile

Examine these graphs/diagrams of drug release:

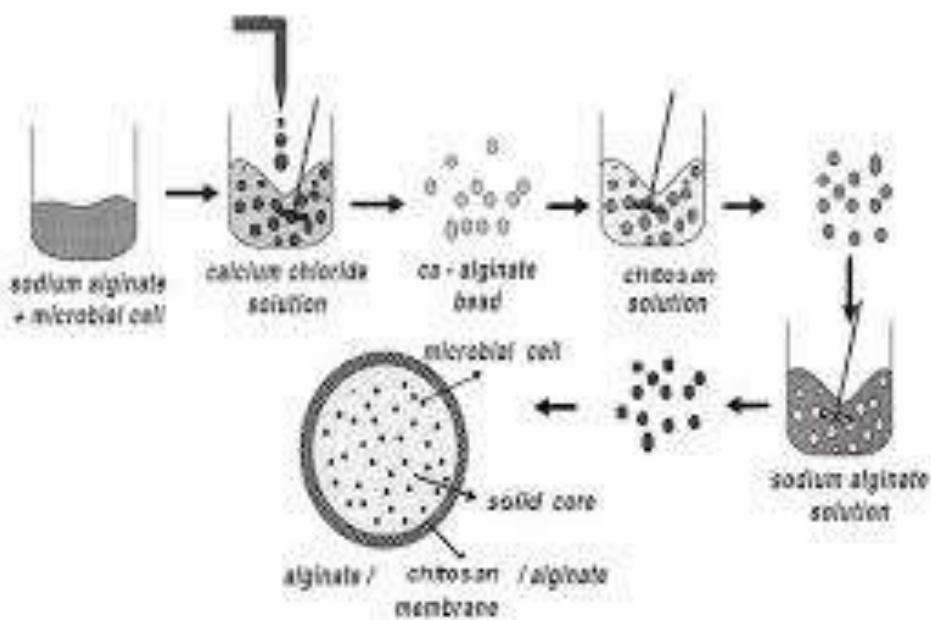
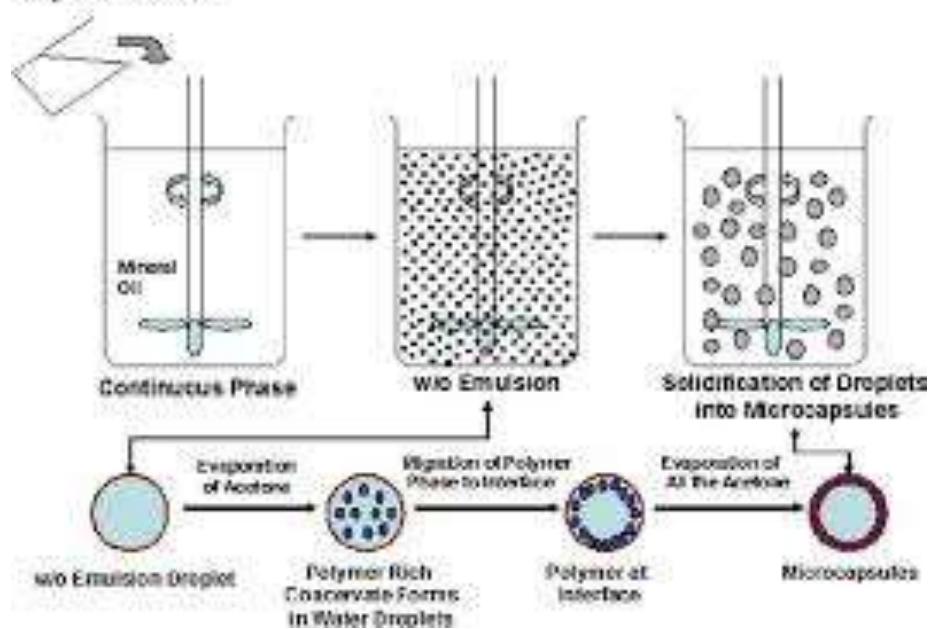


Question: Compare conventional vs. microencapsulated drug release. Which curve shows fluctuating plasma levels (peaks and troughs), and which shows steady, sustained levels? Why is the sustained one an advantage?

Puzzle 5: Spot the Process Steps

General microencapsulation schematic:

Dispersion Phase



Question: Sequence the typical steps shown: emulsion formation, coating deposition, drying/hardening, collection. Number them 1-4.