

# THE PUZZLES FOR UNIT 2

Absolutely! Here are **three different types of puzzles** for Unit 2 (Microencapsulation, Mucosal Drug Delivery, Implantable Drug Delivery Systems). These are perfect for revision, quizzes, or group activities.

## 1. Crossword Puzzle

### Across

2. The process of enclosing drugs in a polymer shell
4. The oral cavity site used for mucosal drug delivery
6. Property that allows a dosage form to stick to mucosal surfaces
7. A disadvantage of non-biodegradable implants

### Down

1. Tiny spherical particles used in controlled drug delivery
2. A device that uses pressure to deliver drugs at a controlled rate
3. A method of microencapsulation involving rapid drying of a sprayed solution

### Answers:

- 1 Down: MICROSPHERES
- 2 Across: MICROENCAPSULATION
- 3 Down: OSMOTIC PUMP
- 4 Across: BUCCAL
- 5 Down: SPRAYDRYING
- 6 Across: MUCOADHESION
- 7 Across: REMOVAL

## 2. Word Search

**Find and circle the following words:**

MICROENCAPSULATION

MICROSPHERES

MICROCAPSULES

MUCOADHESION  
BUCCAL  
IMPLANT  
OSMOTIC  
PERMEABILITY  
COACERVATION  
SPRAYDRYING  
BIOADHESION  
TRANSMUCOSAL  
ADVANTAGES  
DISADVANTAGES  
POLYMERS

(You can create the word search grid online using these words, or draw a 15x15 grid and randomly place the words horizontally, vertically, and diagonally.)

### 3. Match the Following

Column A	Column B
Microencapsulation	Controlled release of drugs
Mucoadhesion	Sticking to mucosal surfaces
Osmotic pump	Zero-order drug release
Buccal delivery	Oral mucosa
Microspheres	Matrix-type particles
Coacervation	Microencapsulation method
Implant	Surgical insertion
Permeability	Ability to cross membranes

### 4. Fill in the Blanks

1. The process of enclosing active ingredients in a polymer shell is called \_\_\_\_\_.
2. \_\_\_\_\_ are spherical particles used for controlled drug delivery.
3. The property of a dosage form to adhere to mucosal surfaces is known as \_\_\_\_\_.

4. An \_\_\_\_\_ is a drug delivery device placed inside the body, often surgically.
5. The \_\_\_\_\_ pump delivers drugs using osmotic pressure for controlled release.
6. \_\_\_\_\_ is a method of microencapsulation involving phase separation.

**Answers:**

1. Microencapsulation
2. Microspheres
3. Mucoadhesion
4. Implant
5. Osmotic
6. Coacervation

**5. True or False**

1. Microencapsulation can be used for taste masking. (True)
2. Buccal drug delivery avoids first-pass metabolism. (True)
3. Implants are always biodegradable. (False)
4. Mucoadhesion increases the residence time of a drug at the site of absorption. (True)
5. Spray drying is not used for microencapsulation. (False)