

# PUZZLES FOR UNIT 3

## 1. Crossword Clues

- **Across**

- The outermost layer of the skin, acting as the main barrier for TDDS. (*Stratum Corneum*)<sup>[1][2]</sup>
- This system delivers drugs through the skin for systemic effects. (*Transdermal*)<sup>[1][2]</sup>
- The most common mechanism of drug absorption through the skin. (*Passive Transport*)<sup>[1][2]</sup>
- Device used for inhaling dry powder formulations. (*DPI*)
- The patch first approved in 1979 was for this condition. (*Motion Sickness*)<sup>[2]</sup>

- **Down**

- The main excipient in DPIs that improves powder flow. (*Lactose*)
- The layer of skin where drugs enter systemic circulation from TDDS. (*Dermis*)<sup>[1][2]</sup>
- A system designed to retain drugs in the stomach for prolonged periods. (*Gastroretentive*)
- The primary disadvantage of floating GRDDS. (*Requires High Fluid Level*)<sup>[2]</sup>

## 2. Match the Pair

Column A	Column B
Stratum corneum	Main skin barrier
Passive transport	Common skin permeation mechanism
Dermis	Entry to systemic circulation
Lactose	DPI carrier
Floating system	Gastroretentive approach
Beclomethasone	Nasal spray drug
Polyacrylate	TDDS adhesive

## 3. Fill in the Blanks

- The \_\_\_\_\_ is the main barrier to drug permeation in TDDS. (*stratum corneum*)<sup>[1][2]</sup>

2. Most drugs are absorbed through the skin by \_\_\_\_\_ transport. (*passive*)<sup>[1][2]</sup>
3. The first transdermal patch approved in 1979 was for \_\_\_\_\_ sickness. (*motion*)<sup>[2]</sup>
4. \_\_\_\_\_ is commonly used as a carrier in dry powder inhalers. (*Lactose*)
5. \_\_\_\_\_ systems are designed to prolong gastric residence time. (*Gastroretentive*)
6. \_\_\_\_\_ and \_\_\_\_\_ are two main types of inhalers. (*MDI, DPI*)
7. The main disadvantage of floating GRDDS is the requirement for a high level of \_\_\_\_\_ in the stomach. (*fluid*)<sup>[2]</sup>

#### 4. Multiple-Choice Brain Teasers

1. Which of the following is NOT an advantage of TDDS?
  - A) Noninvasive
  - B) Avoids GI tract
  - C) Larger doses can be administered
  - D) Useful for drugs with narrow therapeutic indices

**Answer:** C<sup>[1]</sup>

2. The ideal molecular weight for a drug for TDDS is:
  - A) Not more than 800 Dalton
  - B) Not more than 1000 Dalton
  - C) Not more than 400 Dalton
  - D) Not more than 1200 Dalton

**Answer:** C<sup>[2]</sup>

3. The absorption of peptides in the nasal cavity primarily occurs via:
  - A) Transcytotic
  - B) Paracellular (intracellular)
  - C) Transcellular
  - D) None of the above

**Answer:** B<sup>[2]</sup>

#### 5. Short Riddles

- I am a patch, placed on skin, I avoid the liver, and deliver within. What am I?  
(*Transdermal Drug Delivery System*)
- I float in your stomach, not to escape, to release the drug at a controlled rate. What am I?  
(*Floating Gastroretentive System*)

1. <https://www.simplepharmanotes.com/2020/10/mcqs-transdermal-drug-delivery-system.html>
2. <https://remixededucation.in/novel-drug-delivery-systems-unit-3-mcqs-with-answers/>
3. <https://www.sanfoundry.com/drug-biotechnology-questions-answers-transdermal-drug-delivery-systems/>