

NAME: **ANSWER KEY**

CHOOSE THE ONE BEST ANSWER

MATCHING (1 point each)

1. F Spacer	A. Front-Door Drug
2. C Holding Chamber	B. Wetting Agents
3. A Xopenex	C. Contains a one-way valve
4. I Atrovent	D. Breaks down Disulfide bonds
5. D Mucomyst	E. Examples are Guifenesin and SSKI
6. H Tachycardia	F. Lacks a one-way valve
7. J 15%	G. Narcotic and Non-narcotic types
8. E Expectorant	H. All bronchodilators
9. G Cough Suppressant	I. Back Door Drug
10. B Bland Aerosol	J. Percent improvement in peak flow to be significant.

SHORT ANSWER

11. Give an example of an actual drug combination (front-door, side-door, back door) that would be inappropriate. (2 points)

FRONT-DOOR	BACK-DOOR	SIDE-DOOR
EPINEPHRINE	ATROPINE	THEOPHYLLINE
METAPROTERENOL	IPRATROPIUM	AMINOPHYLLINE
TERBUTALINE	TIOTROPIUM	
ALBUTEROL		
PIRBUTEROL		
LEVALBUTEROL		
*SALMETEROL		
*FORMOTEROL		

12. Briefly describe how a dry powder inhaler works. (3 points)
INHALATION OF DRUG IN A CRYSTALLINE OR POWDER FORM. DPIs ARE BREATH ACTIVATED, AND MAY REQUIRE HIGHER FLOWS TO RELEASE THE POWDER AND MAY RESULT IN INCREASED PHARYNGEAL IMPACTION

13. List three factors that would lead to thick, tenacious mucus. (3 points)
- SMOKING**
 - ENVIRONMENTAL IRRITANTS**
 - ALLERGY**
 - INFECTIONS**
 - GENETIC PREDISPOSITION**
 - FOREIGN BODIES**
 - IRRITANTS**
 - DECREASED CILIARY FUNCTION**
 - INADEQUATE HYDRATION**
 - ARTIFICIAL AIRWAYS WITHOUT PROPER HUMIDIFICATION**
 - TEMPERATURE EXTREMES**
 - INCREASED F_{iO_2}**
14. Describe what action should be taken after administering a steroid by MDI (2 points)
- ALWAYS GIVE A STEROID WITH A RESERVOIR DEVICE**
 - HAVE THE PATIENT RINSE THEIR MOUTH AFTERWARDS TO AVOID FUNGAL INFECTIONS**

CALCULATIONS (2 points each)

15. 0.3 mL of a 5% solution contains how many milligrams?
 $(\# \text{ mL} \times \# \% \times 10) = \# \text{ mg}$
 $(.3 \text{ mL} \times 5\% \times 10) = 15 \text{ mg}$
16. You have 100 mL of a 50% solution. If you add 250 mL, what is the new concentration?
 $(C_1 \times V_1) = (C_2 \times V_2)$
 $C_2 = \frac{(C_1 \times V_1)}{V_2} = \frac{(50\% \times 100 \text{ mL})}{(100 \text{ mL} + 250 \text{ mL})} = \frac{50}{350} = .143 = 14.3\%$
17. You have an MDI that contains 120 actuations. Ignoring priming actuations, how long (in days) will the MDI last if the prescription reads “two puffs BID”.
 $\frac{120 \text{ puffs}}{2 \times 2} = \frac{120}{4} = 30 \text{ days}$

18. Diagram the Adrenergic pathway (4 points).

