1-The inspiratory flow-volume curve is most valuable for:
A. Detecting fixed upper airway obstruction.
B. Measuring the response to bronchodilator drugs.
C. Differentiating between chronic bronchitis and emphysema.
D. Detecting resistance in small peripheral airways.
E. Detecting fatigue of the diaphragm.

2- Concerning the single-breath nitrogen test:
A. It is usually normal in mild COPD.
B. The slope of phase 3 is increased in chronic bronchitis.
C. In phase 3, well-ventilated units empty last.
D. In normal subjects, the last expired gas comes from the base of the lung.
E. The expiratory flow rate should be as fast as possible.

3-The closing volume as measured from the single-breath N2 test:
A. Decreases with age.
B. Is highly reproducible.
C. Is affected by the small, peripheral airways.
D. Is most informative in patients with severe lung disease.
E. Is normal in mild COPD.

4- A 72-year-old woman who is a heavy smoker complains of worsening dyspnea and a productive cough over a 9-month period. Spirometry shows an FEV1 1.1 liters, an FVC 2.8 liters, and an FEV1/FVC ratio of 0.39. Which of the following mechanisms best accounts for the results of these tests?
A. Decreased lung compliance
B. Dynamic compression of the airways
C. Increased radial traction on the airways
D. Increased thickness of the blood-gas barrier
E. Weakness of the diaphragm

5- A 61-year-old man with a 30-pack-year history of smoking complains of worsening dyspnea and a dry cough over a 6-month period. Spirometry shows an FEV1 of 1.9 liters, an FVC of 2.2 liters, and an FEV1/FVC ratio of 0.86. Which of the following diseases is consistent with this presentation?
A. Asthma
B. Chronic bronchitis
C. Chronic obstructive pulmonary disease
D. Pulmonary fibrosis
E. Pulmonary hypertension