

46- Concerning cigarette smoke:

- A. Inhaled smoke contains negligible amounts of carbon monoxide.
- B. Cigarette smokers can have enough carboxyhemoglobin in their blood to impair mental skills.
- C. Nicotine is not addictive.
- D. The risk of coronary heart disease is not affected by smoking.
- E. The concentration of pollutants in cigarette smoke is less than in the air of a large city on a smoggy day.

47- In a coal miner, the deposition of coal dust in the lung will be reduced by:

- A. Frequent coughing.
- B. Exercise.
- C. Mining operations that produce very small dust particles.
- D. Rapid deep breathing.
- E. Nose breathing, as opposed to mouth breathing.

48- Concerning the mucociliary escalator in the lung:

- A. Most of the mucus comes from goblet cells in the epithelium.
- B. Trapped particles move more slowly in the trachea than in the peripheral airways.
- C. Normal clearances take several days.
- D. The cilia beat about twice a second.
- E. The composition of the mucous film is altered in some diseases.

49- A 70-year-old man with no smoking history presents with 8 months of worsening dyspnea and a nonproductive cough. He spent many years as an insulation worker in the shipyards. On exam, he has a fast respiratory rate with small volumes and fine crepitations at the bases of his lungs. A plain chest radiograph reveals basilar net-like opacities and calcified pleural plaques. Spirometry shows an FEV1 of 65% predicted, an FVC of 69% predicted, and FEV1/FVC ratio of 0.83. Which of the following is the most likely diagnosis?

- A. Asbestosis
- B. Berylliosis
- C. Chronic obstructive pulmonary disease
- D. Coal-worker's pneumoconiosis
- E. Silicosis

50- A 24-year-old woman with a 5-year history of injection drug use but no other past medical history is evaluated for worsening dyspnea and a dry cough over a period of 2 weeks. On exam, she is tachypneic with an oxygen saturation of 85% breathing air. Her neck veins are not elevated, her cardiac exam is normal, and she has diffuse rhonchi on auscultation. After a chest radiograph reveals diffuse bilateral opacities, a sputum sample is obtained and shows evidence of *Pneumocystis jirovecii* pneumonia. Which of the following is the most appropriate next diagnostic test?

- A. Echocardiography
- B. HIV antibody test
- C. Spirometry
- D. Sweat chloride testing
- E. Tuberculosis skin test