Question #1:
An 83 year-old woman is admitted to a nursing home. Findings on physical examination are normal, as are results of laboratory screening tests. A purified protein derivative (PPD) tuberculin skin test using 5 tuberculin units shows 10 mm of induration at 48 hours.

Question #1 (Cont.):
A chest X-ray shows some right apical pleural thickening with an ill-defined density in the posterior segment of the right upper lobe. There are no previous X-rays of the chest for comparison.

Question #1
Which of the following actions would you take?

A. Evaluate her condition q 3 mos to monitor the chest X-ray and her well-being
B. Give isoniazid 300 mg/d for 6 – 12 months for treatment of a tuberculous infection
C. Induce sputum production with the inhalation of hypertonic saline solution; wait for results of sputum cultures before initiating treatment
D. Induce 3 sputum specimens with hypertonic saline solution and start administration of isoniazid, rifampin, and ethambutol
E. Administer isoniazid and ethambutol for 9 mos
Question #2
Conditions commonly associated with cystic fibrosis include each of the following except:

A. Bronchiectasis  
B. Sinusitis  
C. Airflow obstruction  
D. Aspermia  
E. Systemic *Pseudomonas* infections

Question #3
Typical manifestations of asbestos-related intrathoracic disease include each of the following except:

A. Fibrocalcific parenchymal disease, predominantly involving the upper zones of the lung  
B. Pleural plaques  
C. Malignant mesothelioma  
D. Benign pleural effusions  
E. Bronchogenic carcinoma

Question #4:
During December of last year, a 63 year-old man with a 60 pack-year history of cigarette smoking noticed an increase in the amount of his usual sputum production. His sputum became now yellow-green. Findings on physical examination were normal. His temperature was 37.8°C (100°F). A chest X-ray was obtained and was normal.

A gram stain of sputum showed less than 10 squamous epithelial cells per low-power field and many neutrophils per high-power field. The predominant organisms on the gram-stained smear were gram-negative cocci in pairs.

You would initiate a course of antibiotic therapy using which of the following?

A. Ampicillin, orally  
B. Amoxicillin-clavulanic acid, orally  
C. Procaine penicillin G, intramuscularly twice a day  
D. Cefoxatime, intravenously  
E. Cephalexin, orally

Question #5
An intensive pulmonary rehabilitation program in patients with chronic obstructive pulmonary disease has been shown to improve

A. Survival  
B. Cardiovascular function  
C. Exercise tolerance  
D. Expiratory flow rates
Question #6:

A 19 year-old man with acute myelocytic leukemia and a leukocyte count of 450 cells/µL has a fever and a localized pulmonary infiltrate ten days after beginning chemotherapy. The platelet count is 10,000/µL. Sputum is scanty and has little color. Microscopic examination of a sputum specimen shows no leukocytes, erythrocytes, or microorganisms.

The pathogen most likely to cause this illness is

A. *Aspergillus* species
B. Cytomegalovirus
C. *Nocardia* species
D. Gram-negative bacilli
E. *Candida* species

Question #7:

An arterial blood gas analysis shows a PO₂ of 40 mm Hg, PCO₂ of 80 mm Hg, and a pH of 7.10 in a patient breathing room air.

These findings are most likely to be associated with which of the following disorders?

A. Adult respiratory distress syndrome
B. Status asthmaticus
C. Severe bacterial pneumonia
D. End-stage chronic obstructive pulmonary disease
E. Sedative drug overdose

Question #8:

A 52 year-old school teacher presents for a check-up. She has recently moved to the area to assume a new teaching position. She has never smoked cigarettes and has been found healthy at previous annual check-ups.

Her physical examination and routine laboratory studies are normal. However, a routine posteroanterior and lateral chest X-ray shows a 1-cm x 1.8-cm smooth, well-demarcated lesion in the right middle lobe.
Question #8
The appropriate initial step for the patient's internist would be:

A. Obtain a chest PET-CT scan
B. Order a transthoracic needle biopsy
C. Ask a pulmonologist to perform bronchoscopy
D. Obtain prior CXRs from her former physician
E. Order chest MRI

Question #9:
A 47 year-old woman presents with a six-week history of nonproductive cough, moderate exertional dyspnea, and temperature to 38.3°C (101°F). The patient has been in good health in the past, although she has smoked two packs of cigarettes per day for the last 25 years. The patient has received clarithromycin 500 mg orally four times a day for 10 days on two occasions without improvement in her symptoms.

Question #9 (Cont.):
There is no history of ocular inflammation, skin rash, or arthritis.

The physical examination shows normal jugular venous pressure and no peripheral lymphadenopathy. The intensity of breath sounds is normal except over the lower lobes bilaterally where they are significantly reduced. There are also bibasilar crackles, but no bronchial breathing or egophony, and no wheezing.

Question #9 (Cont.):
Laboratory studies:
- Hematocrit 31%
- Leukocyte count, 11,100/ul with 18% lymphocytes, 64% polys, 7% band forms, 6% monocytes, and 5% eosinophils
- Serum creatinine 0.8 mg/dl
- Urinalysis is normal
- The chest X-ray shows airspace disease at both lung bases.

Question #9
The most likely diagnosis is:

A. Legionnaire's disease
B. Wegener's granulomatosis
C. Streptococcus pneumoniae pneumonia
D. Idiopathic pulmonary fibrosis
E. Bronchiolitis obliterans organizing pneumonia
Questions #10-14
10. A majority of cigarette smokers are affected
11. Reduced FEV₁/FVC ratio
12. Decreased diffusing capacity (DL_{CO})
13. Most patients have a deficiency of alpha-1 antitrypsin
14. Montelukast (Singulair®) is useful in treatment
   A. Emphysema
   B. Asthma
   C. Both
   D. Neither

Questions #15 & 16
15. May be characterized by severe and diffuse lung infiltrates
16. Most commonly caused by sepsis and gastric aspiration
   A. Adult respiratory distress syndrome
   B. Severe cardiogenic pulmonary edema
   C. Both
   D. Neither

Questions #17 & 18
17. Positive-pressure ventilation is an important treatment
18. Corticosteroid therapy has been shown to be beneficial when initiated early
   A. Adult respiratory distress syndrome
   B. Severe cardiogenic pulmonary edema
   C. Both
   D. Neither

Questions #19 - 22
19. Necrobiotic nodules
20. Occurrence in women only
21. Diabetes insipidus
22. Recurrent aspiration pneumonias
   A. Rheumatoid arthritis
   B. Scleroderma
   C. Langerhans cell granulomatosis (histiocytosis X; eosinophilic granuloma)
   D. Lymphangioleiomyomatosis
   E. Idiopathic pulmonary fibrosis

Questions #23-27
23. A 21 year-old healthcare worker with a TB skin test reaction of 15 mm induration. Chest X-ray is normal. The skin test was positive 5 years ago at 10 mm induration.
   A. Yes
   B. No

24. A 74 year-old man with no known TB exposure and a clear chest X-ray has a TB skin test of 5 mm induration discovered on routine testing. A repeat skin test 1 week later shows a 15 mm induration.
   A. Yes
   B. No
Questions #23-27 (cont'd)
Treatment of latent tuberculous infection (e.g., isoniazid 300 mg daily) should be given in which of the following cases?

25. A 45 year-old former IV drug abuser who is HIV positive has a clear chest X-ray. His TB test is 5 mm in induration. Prior skin tests are reported as “equivocal.”

A. Yes
B. No

26. A 53 year-old woman with no known medical illnesses and a clear chest X-ray has a TB test reaction of 8 mm. She has never had skin testing and is tested now because her husband has just had active TB diagnosed after a 6-mos illness.

A. Yes
B. No

27. A 26 year-old homeless man has a TB skin test of 15 mm induration. He has no symptoms but his chest X-ray shows a left upper lobe infiltrate.

A. Yes
B. No