

Respiratory System Test Bank - Mid-Exam

Q1. The hilum of the right lung is located between which vertebral levels?

- A. C3-C6
- B. T4-T5
- C. T5-T7
- D. T2-T3

Answer: C. T5-T7

Q2. Which statement about the cricoid cartilage is incorrect?

- A. It forms two synovial joints
- B. It is attached to a membrane containing the vocal ligament
- C. Tracheostomy can be performed above and below it
- D. Sensory innervation of its mucosa is provided by the internal laryngeal nerve

Answer: D. Sensory innervation of its mucosa is provided by the internal laryngeal nerve

Q3. All of the following nerves supply the lateral wall of the nose except?

- A. Short sphenopalatine nerve
- B. Long sphenopalatine nerve
- C. Greater palatine nerve
- D. Anterior ethmoidal nerve
- E. Infraorbital nerve

Answer: B. Long sphenopalatine nerve

Q4. Which of the following is incorrect regarding the intermaxillary segment?

- A. It forms the philtrum
- B. It forms the four upper incisor teeth
- C. It forms the medial part of the lower lip
- D. It forms the primary palate

Answer: C. It forms the medial part of the lower lip

Q5. When a needle is inserted into the cricothyroid membrane, where does it enter?

- A. Laryngeal vestibule
- B. Laryngeal sacculles
- C. Infraglottic space
- D. Supraglottic cavity
- E. Laryngeal ventricle

Answer: C. Infraglottic space

Q6. All of the following participate in closure of the laryngeal inlet except?

- A. Epiglottis
- B. Oblique arytenoid muscle
- C. Transverse arytenoid muscle
- D. Elevation of the larynx
- E. Lateral cricoarytenoid muscle

Answer: E. Lateral cricoarytenoid muscle

Q7. Bilateral partial injury is most dangerous because it leads to paralysis of which muscle?

- A. Posterior cricoarytenoid muscle
- B. Lateral cricoarytenoid muscle
- C. Cricothyroid muscle
- D. Thyroarytenoid muscle

Answer: A. Posterior cricoarytenoid muscle

Q8. Which congenital anomaly is commonly associated with tracheoesophageal fistula and esophageal atresia?

- A. Anal atresia
- B. Cardiac anomalies
- C. Vertebral anomalies
- D. Limb anomalies

Answer: B. Cardiac anomalies

Q9. Which statement about aspiration of a foreign body is incorrect?

- A. The right main bronchus is wider than the left
- B. The vertical orientation of the right bronchus favors entry into the right lung
- C. The foreign body will go to the right lung's apicobasal segment
- D. Gravity influences the descent of an aspirated object

Answer: C. The foreign body will go to the right lung's apicobasal segment

Q10. Which drug is contraindicated in *Stenotrophomonas maltophilia* infection because of intrinsic resistance?

- A. Trimethoprim-sulfamethoxazole
- B. Levofloxacin
- C. Tigecycline
- D. Imipenem

E. Minocycline

Answer: D. Imipenem

Q11. Which of the following acts as an opsonin in the respiratory tract?

- A. Lysozyme
- B. Surfactant A
- C. Mucin
- D. Immunoglobulin M

Answer: B. Surfactant A

Q12. Which statement about the suprapleural membrane is false?

- A. Laterally, it is adjacent to the medial surface of the first rib
- B. Medially, it is connected with Sibson's fascia
- C. Apically, it attaches to the first transverse vertebra
- D. It covers the cupola of the lung

Answer: C. Apically, it attaches to the first transverse vertebra

Q13. Which of the following is correct regarding chronic bronchitis?

- A. Patients experience severe dyspnea early in the disease
- B. Patients tend to be overweight
- C. There is minimal sputum production
- D. Forced expiratory volume (FEV1) remains normal

Answer: B. Patients tend to be overweight

Q14. All of the following are features of asthma histology except?

- A. Hypertrophy of smooth muscle cells
- B. Hypertrophy of mucus secretory cells
- C. Collagen deposition in the submucosa
- D. Alveolar destruction

Answer: D. Alveolar destruction

Q15. In a patient with acute respiratory distress syndrome (ARDS), hyaline membranes are composed of?

- A. Surfactant and plasma proteins
- B. Fibrin-rich exudate and necrotic debris
- C. Mucous secretions and inflammatory cells
- D. Collagen and fibroblasts

Answer: B. Fibrin-rich exudate and necrotic debris

Q16. After knee replacement surgery, a patient's oxygen levels decline and breath sounds are absent over the right lung. What explains the pathogenesis?

- A. Mucous obstruction and resorption atelectasis
- B. Compression atelectasis due to pleural effusion
- C. Contraction atelectasis caused by pulmonary fibrosis
- D. Microthrombi causing pulmonary embolism

Answer: A. Mucous obstruction and resorption atelectasis

Q17. Which part of the airway is most affected in asthma?

- A. Alveoli
- B. Respiratory bronchioles
- C. Terminal bronchioles
- D. Alveolar ducts

Answer: C. Terminal bronchioles

Q18. You can see only one or two pieces of cartilage in which of the following?

- A. Main bronchi
- B. Secondary bronchi
- C. Bronchopulmonary segments
- D. Large bronchioles
- E. Small bronchioles

Answer: C. Bronchopulmonary segments

Q19. Which of the following statements about dust cells (alveolar macrophages) is wrong?

- A. They are derived from circulating monocytes
- B. They reach the pharynx by ciliary movement
- C. They are the most abundant cell in the respiratory membrane
- D. They can phagocytose inhaled dust particles and bacteria

Answer: C. They are the most abundant cell in the respiratory membrane

Q20. Which of the following statements about the laryngeal nerves is wrong?

- A. The internal laryngeal nerve arises as a branch of the superior laryngeal nerve from the vagus nerve
- B. Sensory innervation of the cricoid mucosa is provided by the internal laryngeal nerve
- C. The cricothyroid muscle receives its motor supply from the external branch of the superior laryngeal nerve
- D. All intrinsic laryngeal muscles, except the cricothyroid, are innervated by the recurrent laryngeal nerve

Answer: B. Sensory innervation of the cricoid mucosa is provided by the internal laryngeal nerve

Q21. A patient suffers damage to the middle cranial fossa after a car accident. Which nerves in the pterygoid canal are likely damaged?

- A. Greater and lesser petrosal nerves
- B. Greater and deep petrosal nerves
- C. Preganglionic sympathetic and parasympathetic fibers
- D. Postganglionic sympathetic and parasympathetic fibers

Answer: B. Greater and deep petrosal nerves

Q22. A stab wound at which point is not expected to cause a pneumothorax?

- A. 9th intercostal space in the midclavicular line
- B. 9th intercostal space in the midaxillary line
- C. 9th intercostal space in the scapular line
- D. All of the above are incorrect

Answer: A. 9th intercostal space in the midclavicular line

Q23. In a standing person, a foreign object enters the respiratory tract. Which of the following statements is false?

- A. It is more likely to enter the right lung
- B. The right main bronchus is wider than the left
- C. Gravity affects its descent
- D. The vertical orientation of the right bronchus favors the right side
- E. It will go to the right lung's apicobasal segments

Answer: E. It will go to the right lung's apicobasal segments

When paralyzed

Q24. Which muscle widens the rima glottidis?

- A. Posterior cricoarytenoid muscle
- B. Lateral cricoarytenoid muscle
- C. Cricothyroid muscle
- D. Thyroarytenoid muscle

Answer: B. Lateral cricoarytenoid muscle

Explanation: The lateral cricoarytenoid muscles rotate the arytenoid cartilages medially, acting as the primary adductors of the vocal folds. Their paralysis leaves the posterior cricoarytenoid muscles unopposed, so the vocal folds remain abducted and the rima glottidis becomes wider

Q25. A neonate is examined immediately after birth. A chest X-ray reveals a peripheral lung opacity. What is the most common cause?

- a) Collapsed lung due to traumatic delivery
- b) Congenital deficiency of surfactant
- c) Pleural effusion
- d) This is a normal finding; the alveoli inflate several days after delivery
- e) Pneumothorax

Answer: D



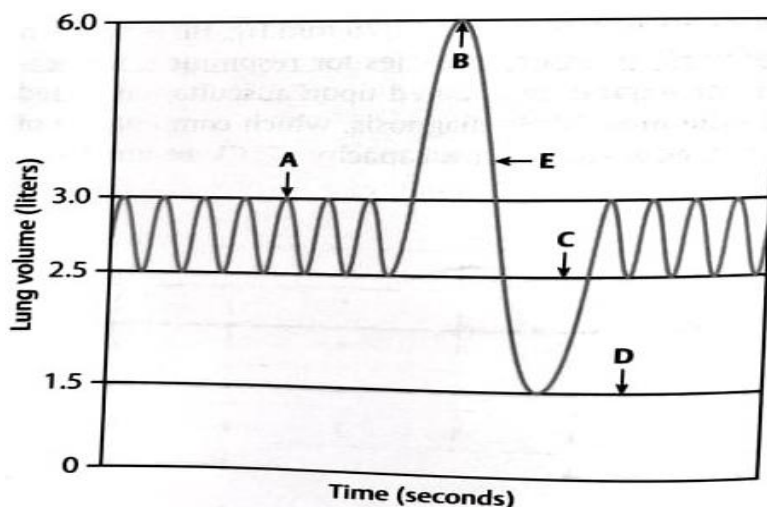
No	A	B	C	D	E	Correct	Difficulty
1. The amount of air present in the lungs when all respiratory muscles are relaxed:							
1	201	38	451	36	50	451	0.5812
A. residual volume							
B. expiratory reserve volume							
C. functional residual capacity							
D. minimal volume							
E. tidal volume							
2. If alveolar surface area is decreased 50% and pulmonary edema leads to a doubling of diffusion distance, how does diffusion of O ₂ compare with normal?							
2	26	48	203	226	272	272	0.3505
A. 25% increase							
B. 50% increase							
C. 25% decrease							
D. 50% decrease							
E. 75% decrease							
3. Resting volume of the lung=thorax system would be lesser than FRC if:							
3	91	424	129	60	71	424	0.5464
A. surface tension forces are less							
B. surfactant is absent							
C. elastic recoil forces are less							
D. COPD							
E. emphysema							
4. In a person breathing normally at rest with an environmental temperature of 25°C, regarding the partial pressure, all the following are true EXCEPT							
4	21	365	204	120	65	365	0.4704
A. Of CO ₂ in alveolar air is about 40 mm Hg							
B. Of water vapor in alveolar air is less than half the alveolar PCO₂ level							
C. Of water vapor in alveolar air is greater than that in room air even at 100 per cent humidity							
D. Of O ₂ in expired air is greater than in alveolar air							
E. Of CO ₂ in mixed venous blood is greater than in alveolar air							



5. The mean systemic arterial pressure and the mean pulmonary artery pressure are respectively 90 and 15 mm Hg. Can you tell the ratio of systemic and pulmonary vascular resistances?

5 33 618 48 31 45 618 0.7964

- A. 1
- B. 10
- C. 6
- D. 15
- E. Data inadequate



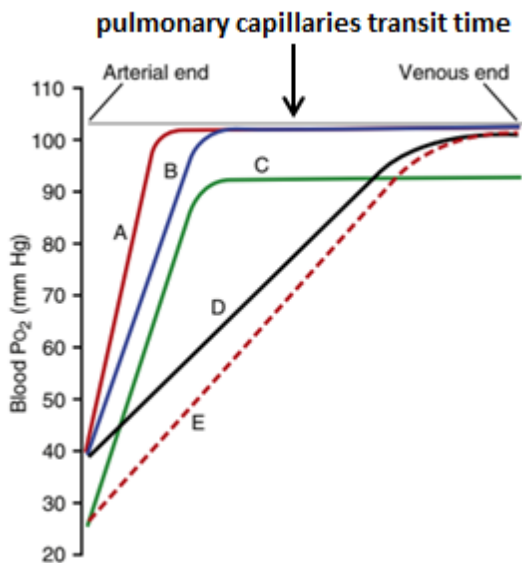
6. As a person takes a deep breath, the pulmonary vascular resistance changes with lung volume. At which lung volume or capacity does the pulmonary vascular resistance have the minimum value?

6 49 163 331 183 49 331 0.4265

- A. A
- B. B
- C. C
- D. D
- E. E

7. A 23-year-old medical student has a fourfold increase in cardiac output during strenuous exercise. Which curve on the figure below most likely represents the changes in O_2 tension that occur as blood flows from the arterial end to the venous end of the pulmonary capillaries in this student?

7 158 148 142 245 81 81 0.1044



Question 7 Figure

Answer: E (curve E)

8. Regarding vital capacity, all are true EXCEPT

8 92 48 68 59 508 508 0.6546

- A. It is the volume of air expired from full inspiration to full expiration
- B. It is reduced as one grows older
- C. It is less in restrictive lung disease
- D. It is measured using a spirometer.
- E. It is the sum of the inspiratory and expiratory reserve volumes**

9. A pressure-volume curve can be used for measuring:

9 52 85 60 560 18 560 0.7216

- A. The physiological dead space.
- B. Functional residual capacity
- C. Anatomical dead space
- D. Compliance**
- E. Respiratory quotient

10. From total lung capacity, a person breathes into and from a spirometer (volume 12 liters) containing 10% helium gas mixture. After equilibration, helium concentration of expired gas was found to be 6.7%. His vital capacity is 4.2 liters. What is his residual volume?

10 48 229 137 **274** 86 274 0.3531

- A. 1000 ml
- B. 1200 ml
- C. 1500 ml
- D. 1800 ml**
- E. cannot be obtained from the above data.



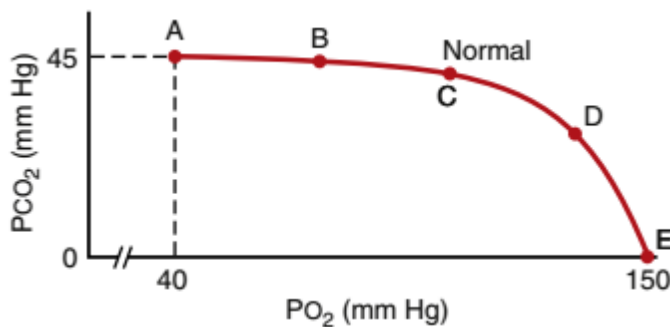
11. Surfactant deficiency is not likely to produce:

11 19 48 646 34 28 646 0.8325

- A. Collapse of alveoli
- B. Increased surface tension of the fluid lining alveoli
- C. Increased compliance of the lungs**
- D. increased work of breathing
- E. Respiratory distress syndrome in newborns

12. A 67-year-old man has a solid tumor that pushes against an airway, completely obstructing air flow to the distal alveoli. Which point on the V/Q line of the O₂-CO₂ diagram below corresponds to the alveolar gas of these distal alveoli

12 451 101 23 110 91 451 0.5812



- A. A
- B. B.
- C. C
- D. D
- E. E

13. Regarding air in the pleural cavity (pneumothorax), all the following are true EXCEPT

13 90 41 519 45 80 519 0.6688

- A. Allows intrapleural pressure to rise to atmospheric pressure
- B. Causes the underlying lung to collapse by compressing it
- C. Increases the functional residual capacity**
- D. Leads to a slight outward movement of the chest wall
- E. reduces venous return

Respiratory System Final Exam

Q1. In an HIV patient presenting with dry cough, low-grade fever, glass-like opacities on chest radiograph and eosinophilia, who is non-compliant with HIV therapy, which antibiotic is appropriate?

- A. Doxycycline
- B. Itraconazole
- C. Trimethoprim-sulfamethoxazole
- D. Azithromycin

Answer: C. Trimethoprim-sulfamethoxazole

Q2. Which antibiotic is inappropriate for treating walking pneumonia (*Mycoplasma pneumoniae*)?

- A. Amoxicillin
- B. Clarithromycin
- C. Erythromycin
- D. Moxifloxacin
- E. Tetracycline

Answer: A. Amoxicillin

Q3. Which anti-tuberculosis drug is considered broad spectrum?

- A. Isoniazid
- B. Rifampin
- C. Ethambutol
- D. Pyrazinamide

Answer: B. Rifampin

Q4. Which common adverse effect is associated with anti-tuberculosis drugs?

- A. Ototoxicity
- B. Hepatotoxicity
- C. Nephrotoxicity
- D. Optic neuritis

Answer: B. Hepatotoxicity

Q5. Which drug and adverse effect pair is mismatched?

- A. Beta-2 agonists - tremor
- B. Corticosteroids - oral candidiasis
- C. LT4 - hepatotoxicity

D. Zafirlukast - hoarseness

Answer: D. Zafirlukast - hoarseness

Q6. Which drug and therapeutic effect pair is mismatched?

- A. Diphenhydramine - coats mucous lining
- B. Water vapor - demulcent
- C. Codeine - central cough inhibition
- D. Expectorants - increase sputum volume

Answer: A. Diphenhydramine - coats mucous lining

Q7. Which effect of codeine is also present in dextromethorphan?

- A. Addictive
- B. Analgesic
- C. Mucociliary inhibition
- D. Central cough inhibition

Answer: D. Central cough inhibition

Q8. Which antibiotic and susceptible bacteria pair is mismatched?

- A. Vancomycin - MRSA
- B. Cefuroxime - Moraxella catarrhalis
- C. Ampicillin - Acinetobacter
- D. Aztreonam - Listeria

Answer: D. Aztreonam - Listeria

Q9. Which drug and adverse effect pair is mismatched?

- A. Macrolide - inhibition of drug-metabolizing enzymes
- B. Vancomycin - pseudomembranous colitis
- C. Tigecycline - superinfection
- D. Aminoglycoside - ototoxicity

Answer: B. Vancomycin - pseudomembranous colitis

Q10. A woman's chest X-ray shows lymphadenopathy and biopsy reveals non-caseating granulomas. What is the diagnosis?

- A. Sarcoidosis
- B. Tuberculosis
- C. Berylliosis
- D. Histoplasmosis

Answer: A. Sarcoidosis

Q11. An anemic patient with 12 g/dL hemoglobin consumes 8 mL of oxygen. What is his venous oxygen pressure?

- A. 40 mmHg
- B. 26 mmHg
- C. 30 mmHg
- D. 50 mmHg

Answer: B. 26 mmHg

Q12. A hotel offers parrot shows; several guests develop fever, severe pneumonia and hyponatremia. What is the source of infection?

- A. Parrots
- B. Water in the air-cooling system
- C. Contact with cats
- D. Soil

Answer: B. Water in the air-cooling system

Q13. For healthcare workers, which tuberculosis screening strategy is cost-effective and accurate?

- A. IGRA only
- B. Tuberculin skin test (TST) only
- C. TST with IGRA confirmation if positive
- D. Clinical symptoms and chest X-ray with IGRA testing if abnormal

Answer: C. TST with IGRA confirmation if positive

Q14. Which anti-tuberculosis drug and mechanism pair is false?

- A. Isoniazid - mycolic acid inhibition
- B. Rifampin - inhibition of bacterial DNA-dependent RNA polymerase
- C. Ethambutol - inhibition of arabinogalactan
- D. Pyrazinamide - protein synthesis inhibition

Answer: D. Pyrazinamide - protein synthesis inhibition

Q15. Which drug and organism pair is mismatched?

- A. Aztreonam - oral anaerobes
- B. Vancomycin - MRSA
- C. Ampicillin - *Listeria monocytogenes*
- D. Ceftriaxone - *Streptococcus pneumoniae*

Answer: A. Aztreonam - oral anaerobes

Q16. Which pair is correctly matched?

- A. Formoterol - beta-2 agonist
- B. Ipratropium - leukotriene antagonist
- C. Montelukast - beta-1 agonist
- D. Salmeterol - muscarinic antagonist

Answer: A. Formoterol - beta-2 agonist

Q17. Which drug combination is used to treat acute asthma?

- A. Albuterol and flunisolide
- B. Salmeterol and montelukast
- C. Formoterol and beclomethasone
- D. Theophylline and cromolyn

Answer: A. Albuterol and flunisolide

Q18. Which statement about viruses is most accurate?

- A. All coronaviruses cause mild diseases
- B. An oral vaccine for adenovirus types 4 and 7 is available only for military personnel
- C. Influenza virus type B causes severe pandemics
- D. Human papillomavirus is enveloped

Answer: B. An oral vaccine for adenovirus types 4 and 7 is available only for military personnel

Q19. Which statement about respiratory syncytial virus (RSV) is incorrect?

- A. It is a major cause of lower respiratory tract infections in children
- B. It causes tachypnea and nasal flaring
- C. A vaccine for infants has been approved recently
- D. High-risk groups include infants and older adults
- E. It causes wheezing, chest retraction and nasal flaring

Answer: C. A vaccine for infants has been approved recently

Q20. Which condition decreases oxygen content without decreasing the partial pressure of oxygen (PO₂)?

- A. Cyanide poisoning
- B. Anemia
- C. Carbon monoxide poisoning
- D. Living at high altitude

Answer: C. Carbon monoxide poisoning

Q21. A rightward shift of the oxygen-hemoglobin dissociation curve is associated with:

- A. Fetal hemoglobin (HbF)
- B. Increased pH
- C. Strenuous exercise
- D. Decreased P50
- E. Higher oxygen capacity

Answer: C. Strenuous exercise

Q22. Which statement about the cervical (apical) pleura is false?

- A. It is innervated by intercostal nerves
- B. Injury can cause pneumothorax
- C. Laterally, it blends with Sibson's fascia
- D. It extends above the first rib

Answer: C. Laterally, it blends with Sibson's fascia

Q23. Which statement about exercise is true?

- A. Ventilation and oxygen consumption increase to the same extent
- B. Ventilation increases more than oxygen consumption
- C. Oxygen consumption increases more than ventilation
- D. Ventilation decreases during exercise

Answer: B. Ventilation increases more than oxygen consumption

Explanation: During moderate exercise, ventilation matches metabolic demand, but once intensity exceeds about 60-80% of maximal capacity, ventilation increases disproportionately to oxygen consumption, helping to eliminate CO₂ and maintain acid-base balance.

Q24. What explains an increased serum calcium level in sarcoidosis?

- A. Increased parathyroid hormone secretion
- B. Increased vitamin D release from macrophages in granulomas
- C. Bone resorption due to parathyroid hormone-related peptide
- D. Increased calcium absorption due to intestinal inflammation

Answer: B. Increased vitamin D release from macrophages in granulomas

Q25. Which statement about emerging viruses is true?

- A. SARS and MERS coronaviruses use the same receptor
- B. Coronavirus causes severe disease because of diffuse alveolar damage and microvascular thrombosis
- C. Influenza virus is a coronavirus
- D. Adenovirus is enveloped

Answer: B. Coronavirus causes severe disease because of diffuse alveolar damage and microvascular thrombosis

Q26. After using a Ziehl-Neelsen stain, what can be interpreted?

- A. It confirms infection with *Mycobacterium tuberculosis* only
- B. It indicates the patient is likely infectious but cannot distinguish between *Mycobacterium tuberculosis* and non-tuberculous mycobacteria
- C. It rules out nontuberculous mycobacterial infection
- D. It is negative in *Mycobacterium bovis* infection

Answer: B. It indicates the patient is likely infectious but cannot distinguish between Mycobacterium tuberculosis and non-tuberculous mycobacteria

Q27. Which syndrome is associated with a Pancoast tumor?

- A. Horner syndrome
- B. Cushing syndrome
- C. Superior vena cava syndrome
- D. Lambert-Eaton myasthenic syndrome

Answer: A. Horner syndrome

Q28. What is the most common source of pulmonary embolism?

- A. Deep vein thrombosis
- B. Infective endocarditis
- C. Fat embolism
- D. Right ventricular thrombus

Answer: A. Deep vein thrombosis

Q29. What is the route of dissemination in miliary pulmonary disease?

- A. Hematogenous spread
- B. Lymphatic spread
- C. Bronchogenic spread
- D. Direct extension

Answer: A. Hematogenous spread

Q30. Which anti-tuberculosis drug can cause vitamin B6 deficiency?

- A. Isoniazid
- B. Rifampin
- C. Ethambutol
- D. Pyrazinamide

Answer: A. Isoniazid

Q31. Which of the following is NOT used to treat mycobacterial infections?

- A. Isoniazid

- B. Rifampin
- C. Ethambutol
- D. Amoxicillin

Answer: D. Amoxicillin

Q32. Pleural plaques are associated with exposure to which substance?

- A. Silica
- B. Asbestos
- C. Coal dust
- D. Beryllium

Answer: B. Asbestos

Q33. Which of the following is characteristic of pulmonary arterial hypertension?

- A. Granulomas
- B. Plexiform lesions
- C. Caseous necrosis
- D. Hyaline membranes

Answer: B. Plexiform lesions

Q34. Which lung cancer subtype is positive for TTF5?

- A. Adenocarcinoma
- B. Squamous cell carcinoma
- C. Small-cell carcinoma
- D. Large-cell carcinoma

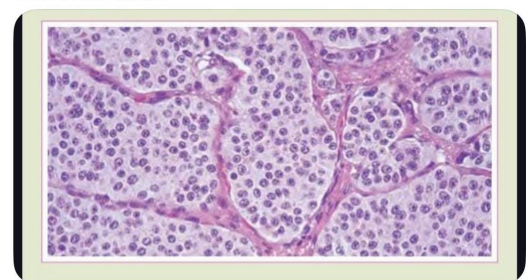
Answer: A. Adenocarcinoma

** Lab questions :-*

Asbestos



Carcinoid tumor



Q52: Identify the type of epithelium indicated with the arrow:

- A. Simple cuboidal ciliated epithelium
- B. Pseudostratified ciliated columnar epithelium
- C. Simple cuboidal ciliated epithelium with goblet cells
- D. Pseudostratified ciliated columnar epithelium with goblet cells
- E. Stratified squamous epithelium non keratinized

Answer: E