



# FINAL RS TEST BANK

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# Pathology

## Past papers

1) Which of the following is wrong regarding chronic bronchitis:

- A) Caused by air pollutants
- B) May be manifested by wheezing
- C) Obstructive bronchitis manifest as blue bloaters
- D) Significant airway obstruction results in almost always complicated by chronic bronchiolitis

ANS: D

2) Which of the following is correct about TB :

- A) Primary TB is not infective
- B) Regional lymph nodes are less involved in secondary TB
- C) 80% of primary TB becomes secondary

ANS: B

3) Which of the following is correct about TB (again):

- A) Secondary TB is localized in the lower lobe
- B) Mycobacterium Bovis causes oropharyngeal TB
- C) Mycobacterium Avium Complex causes disease in 3% of AIDS patients

ANS: B

4) Which of the following is true regarding pulmonary embolism:

- A) The more peripheral the embolic occlusion the lower the risk for infarction
- B) 40% of them are silent
- C) Consequences are only determined by the size of the embolus
- D) Small emboli cause alveolar hemorrhage

ANS: D

5) Which of the following is true about Goodpasture syndrome:

- A) Autoimmune disease that affects the lungs only
- B) IgG granular deposition in the lung is diagnostic
- C) Results in necrotizing hemorrhage interstitial pneumonitis
- D) Predominance in females

ANS: C

6) Choose the true sentence:

- A) Hyalinized collagen fibers are found in silicosis
- B) asbestos bodies are golden brown rounded structures
- C) pleural plaques contain Ca<sup>++</sup> and iron

ANS: A

7) Mass that contains large cells, with large nuclei and prominent nucleoli, and show no glandular or squamous differentiation, what is the diagnosis?

- A) Squamous cell carcinoma
- B) Large cell carcinoma
- C) Carcinoid tumor
- D) Small cell carcinoma

ANS: B

8) True about sarcoidosis:

- A) Higher prevalence in smokers
- B) Mainly occupational disease
- C) In liver it manifests as granulomas surrounding central veins
- D) In more than 50%, it causes granuloma in spleen

ANS: D

9) True about adenocarcinoma:

- A) Forms large masses
- B) Centrally located
- C) It has a wide range of metastasis in a short time

ANS: C

10) True about lung tumors:

- A) They have good prognosis
- B) Adenocarcinoma is the most common in smokers
- C) Women are more susceptible to carcinogens in tobacco than men

ANS: C

11) Long case of a tumor that begins centrally in a localized area and spread widely to the pleura (pleural cell proliferation), this case is associated with?

- A) Distant metastasis
- B) Adenocarcinoma
- C) Extensive pleural fibrosis

ANS: C

12) Inter-alveolar fibrosis with patchy air space consolidation:

- A) Cryptogenic Organizing pneumonia
- B) Carcinoid syndrome
- C) Nonspecific interstitial pneumonia

ANS: A

13) 51-year-old patient presented with right chest pain that increases with inspiration which one is the less likely diagnosis:

- A) Pneumonia
- B) Pulmonary embolism
- C) MI
- D) Pneumothorax

ANS: C

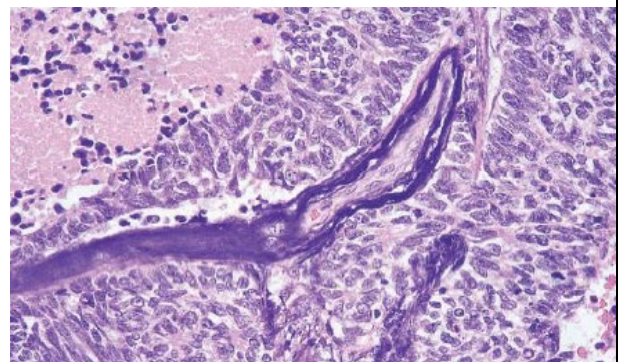
14) What's specific about sarcoidosis?

- A) Non-caseating granuloma
- B) Schaumann bodies
- C) Asteroid bodies
- D) None of the above

ANS: D

15) Case about man, heavy smoker, presented to the clinic with nausea, vomiting and malaise. A clinical history and physical examination and lab results revealed signs and symptoms consistent with the syndrome of inappropriate antidiuretic hormone. A chest X-Ray showed an ill-defined 5 cm mass involving the left hilum of the lung, lung biopsy was performed and captured in the figure below, based on your diagnosis, which of the following statement is CORRECT?

- A) Surgery is a curative treatment
- B) It's an asbestos related tumor
- C) Early involvement of lymph nodes
- D) It's an undifferentiated tumor
- E) This tumor never metastasizes



ANS: C

16) A 40-year-old man, non-smoker, presented with increasing dyspnea for the past 5 years, the disease involves mainly the lower lung lobe, pulmonary function test showed an obstructive pattern, A lung biopsy showed enlarged air spaces and destruction of alveolar wall without fibrosis, what is the most likely cause of this disease?

- A) Type-1 IgE mediated hypersensitivity reaction
- B) Genetic abnormality resulting in primary ciliary dyskinesia
- C) Reduced anti-elastase activity
- D) Mucus hypersecretion and outflow obstruction
- E) poorly differentiated adenocarcinoma

ANS: C

17) Regarding bronchiectasis, one of the following statements is CORRECT:

- A) It's a primary inherited pulmonary disease
- B) considered as reversible obstructive pulmonary disease
- C) Alveolar sacs are the most involved part
- D) Heals with complete resolution and no fibrosis
- E) patient present with cough and purulent sputum

ANS: E

18) Regarding lung tumors, one of the following is CORRECT:

- A) Small cell carcinoma is the most common type
- B) Lung hamartomas are classified as developmental anomalies
- C) Squamous cell carcinoma are the most common tumors in women
- D) Most carcinoids are peripherally located in the lung
- E) Mesothelioma can be epithelial, sarcomatous, or mixed

ANS: E

19) Regarding pneumoconiosis, one of the following is CORRECT:

- A) Coal worker pneumoconiosis is associated with increased risk of lung cancer
- B) Pleural plaques are the most common manifestation of asbestos exposure
- C) pneumoconiosis is defined as chronic restrictive lung disease with unknown etiology
- D) Pulmonary anthracosis is associated with progressive dyspnea and cough

ANS:

20) Case about man with chronic cough and weight loss, clapping of fingers, X-Ray shows left sub-pleural proliferation, lung biopsy shows glandular formation, TTF-1 immune stain is positive, what is your diagnosis?

- A) Adenocarcinoma
- B) Squamous cell carcinoma
- C) Small cell carcinoma
- D) Large cell neuroendocrine carcinoma
- E) Sarcomatous mesothelioma

ANS: A

21) Regarding sarcoidosis one of the following is CORRECT:

- A) hypercalcemia in sarcoidosis isn't related to bone destruction
- B) the presence of non-caseating granuloma in lung biopsy is diagnostic
- C) Asteroid bodies are laminated concretions that contain calcium
- D) The non-caseating granulomas are centered within the alveolar spaces
- E) Corneal opacification are the most common presentation of eye involvement

ANS: A

22) Regarding pulmonary embolism, which statement is correct:

- A) Large saddle PE are associated with no histologic alteration
- B) Most PE arise from thrombi in the heart ventricle
- C) Pulmonary infarcts are usually in the upper lobe
- D) The most common symptom of PE is progressive dyspnea
- E) Bone marrow embolism is common in IV drug abusers

ANS: A

23) Case about man with increasing dyspnea, smoker for 25 years, physical examination shows decreased breathing sound over the upper lung, radiography shows hyperventilation, pulmonary function test shows obstructive pattern, which structure is mostly affected by this disease?

- A) Main bronchi
- B) Terminal bronchioles
- C) Respiratory bronchioles
- D) Alveolar duct and sack
- E) Pleural lining

ANS: C

24) Which of the following is associated with slowly progressive restrictive lung disease showing whorls of concentrically arranged hyalinized collagen bundles surrounding amorphous center?

- A) Coal dust
- B) Tobacco smoke
- C) Mushroom
- D) Crystalline silica
- E) Asbestos

ANS: D

25) Regarding the pathogenesis of atopic asthma one of the following statements is correct:

- A) the initial response upon first exposure is associated with type-1 helper lymphocyte activation
- B) IL-4 & IL-5 are secreted from alveolar macrophages during the early phase response
- C) phago-lysosomal maturation arrest is essential in the pathogenesis during early phase
- D) Eotaxin is a potent chemoattractant and activator of eosinophils in late phase
- E) early phase is triggered by antigen induced crosslinking of IgG bound to receptor on mast cells

ANS: D

26) Which of the following diseases affect the lower lung lobe?

- A) Distal acinar emphysema
- B) Silicosis
- C) Bronchiectasis
- D) Coal worker pneumoconiosis
- E) Hypersensitivity pneumonitis

ANS: C

27) Regarding primary pulmonary TB which is correct?

- A) T-cell mediated immune response develops within the first 30 minutes after exposure
- B) Bacteremia is usually asymptomatic or associated with mild symptoms
- C) The first step after mycobacteria entry is the activation of phagolysosome killing
- D) TNF mobilizes antimicrobial defensins against the mycobacteria
- E) IL-12 stimulate expression of inducible nitric oxide synthase to produce nitric oxide

ANS: B



28) Regarding TB, one of the following is correct?

- A) Mycobacterium avium complex is associated with intestinal TB
- B) Pulmonary TB is associated with extensive lymph node involvement
- C) 95% of primary TB causes develops a progressive disease
- D) Apical lung involvement is characteristic of secondary TB
- E) Lung cavitation is more common during primary disease

ANS: D

29) Regarding cobble stone appearance of the pleural surface which statement is correct?

- A) Associated with usual interstitial pneumonia pattern (UIP) of fibrosis
- B) Characteristic of pleural involvement by malignant mesothelioma
- C) Happens due to lung hyperinflation and air trapping
- D) Associated with miliary pulmonary tuberculosis
- E) Characteristic of non-specific interstitial pneumonia (NISP)

ANS: A

30) Regarding pneumoconiosis which is correct?

- A) The most dangerous mineral dust particle range in size between 5-10  $\mu\text{m}$
- B) Tobacco smoking worsens the effect of all inhaled minerals dust except for asbestosis
- C) Simple coal worker pneumoconiosis is associated with centre-acinar emphysema
- D) The pure form of quartz is less fibro-genic and toxic than mixed form
- E) Asbestosis is associated with increased risk of primary tuberculosis

ANS: C

31) Which of the following is true:

ANS: coal worker's pneumoconiosis is found in the upper lobes of the lung, so are silicosis nodules

32) Which of the following is true:

ANS: Adenocarcinoma is the most common lung tumor

33) Which of the following is wrong about emphysema:

ANS: Usually in the lower lobes

34) Which of the following is wrong about ARDS:

ANS: In most patients, after the acute phase pulmonary function is restored in a year or two

35) Which of the following is wrong about the lungs:

ANS: Obstructive overinflation is due to complete destruction of affected area

36) Which of the following is wrong about bronchiectasis:

ANS: Diagnosis is only through biopsy

37) Which of the following is wrong about sarcoidosis:

ANS: Subcutaneous nodules indicate acute sarcoidosis

38) Which of the following is wrong about Pigeon Breeder's lung disease:

ANS: Predominant cell in bronchioalveolar lavage is neutrophil

39) Which of the following is wrong about restrictive lung diseases:

ANS: Hypersensitivity pneumonitis is caused by type 1 hypersensitivity

40) Temporal heterogeneity is found in:

ANS: Idiopathic pulmonary fibrosis

41) Which of the following is wrong about silicosis:

ANS: A definitive correlation with lung cancer is proven

42) Which of the following is wrong about goodpasture disease:

ANS: Only treatment is renal transplant (Or lung transplant)

43) Which of the following is wrong about IPF:

ANS: Patients have productive cough

44) Which of the following is wrong about chronic bronchitis:

ANS: Decreased number of goblet cells

45) Which of the following is correct about paraneoplastic syndromes:

ANS: Clubbing of the fingers with 5cm Adenocarcinoma

46) A 60 years old smoker, with a central lung tumor, it's most likely to be:

ANS: Squamous cell carcinoma

47) Which of the following is correct about small cell carcinoma:

ANS: No keratin histologically

# Pharmacology

# Pharmacology

## 1. The Non-Specific Treatment of Cough is used in which cases?

- A. allergic or perennial non-allergic sinusitis.
- B. Gastroesophageal Reflux (GERD)
- C. When the cause is unknown.
- D. All the mentioned
- E. Bronchial Asthma.

**Answer: C**

## 2. Quick-relief medications for Asthma include all the following except:

- A. Inhaled Anticholinergics
- B. Topical (inhaled) Corticosteroids
- C. Inhaled Short Acting Beta-2 Agonists
- D. Systemic Corticosteroids

**Answer: B**

## 3. Regarding Asthma which is false?

- A. Therapy must be individualized.
- B. The treatment course is unpredictable.
- C. Asthma is an acute condition.
- D. The goal of therapy is normal function.
- E. The Condition is heterogeneous.

**Answer: C**

## 4. Antitussive Drugs include all the following except:

- a. Drugs that may alter mucociliary factors.
- b. Drugs acting on the efferent limb.

- c. Drugs acting on the cough center.
- d. Drugs acting on the afferent limb.
- e. Drugs acting on the distal tubule.

**Answer: E**

**5. All the following are considered as Second Line Drugs for treatment of tuberculosis except:**

- A. Cycloserine
- B. Amikacin
- C. Ethionamide
- D. Capreomycin
- E. Rifampin

**Answer: E**

**6. All the following are Goals of Therapy in Asthma except:**

- A. No limitation of activities.
- B. No, or infrequent, acute episodes.
- C. Stabilize the condition using beta-agonist inhaler therapy.
- D. No ED visits or missed days in school or work.
- E. Minimal symptoms even during sleep.

**Answer: C**

**7. All the following are considered as Primary or First Line Drugs for the Treatment of Tuberculosis except:**

- A. Rifampin
- B. Streptomycin
- C. Ethambutol
- D. Ethionamide

**Answer: D**

**8. Drugs acting on the afferent limb=Sensory nerves include which of the following?**

- A. Bromhexine
- B. Theophylline
- C. All the mentioned
- d. Carbocisteine
- E. Lidocaine

**Answer: E**

**9. Rifabutin is used instead of Rifampin because:**

- A. It is not affected by CYP P450.
- B. It causes more side effects of protease inhibitors.
- C. Rifampin decreases antiviral activity.

**Answer: C**

**10. Antitussive drugs are used for:**

- A. Bronchial asthma
- B. Cystic fibrosis
- C. Nonproductive dry cough
- D. Pneumonia

**Answer: C**

**11. Choose the mismatch:**

- A. Lemon oil – Increased lysosomal activity.
- B. Hydration – Decreased viscosity.
- C. Carbocisteine – reduction of disulfide bonds.

**Answer: A**

**12. A drug that is an expectorant nor enhances mucociliary action:**

- A. Dextromethorphan.
- B. Bromhexine.
- C. Carbocisteine.

**Answer: A**

**13. Most active drug in Tb treatment is:**

- A. Rifampin
- B. Isoniazid
- C. Streptomycin

**Answer: B**

**14. The agent that is metabolized by mycobacterial catalase–peroxidase (KatG) is:**

- A. Isoniazid
- B. Rifampin
- C. Streptomycin

**Answer: A**

**15. A less potent Anti-TB inducer of CYP450 and is used with HIV patients using protease inhibitor therapy:**

- A. Rifabutin
- B. Rifampin
- C. Capreomycin

**Answer: A**

**16. Ethionamide is related in its mechanism to:**

- A. PAS
- B. Rifampin
- C. Isoniazid

**Answer: C**

**17. A drug that affects mucociliary function and is used in asthma:**

- A. Ammonium chloride
- B. Bromhexine
- C. Beta 2 agonist

**Answer: C**

**18. Which of the following drugs is narcotic?**

- A. Glauicine
- B. Diamorphine
- C. Pholcodine

**Answer: B**

**19. Isoniazid is used in combination to:**

- A. reduce resistance
- B. have bactericidal effects
- C. have higher efficacy

**Answer: A**

**20. Rifabutin is used instead of Rifampin because?**

- A. it is not affected by CYP P450
- B. It causes more side effects of protease inhibitors.



C. Rifampin decreases antiviral activity.

**Answer: C**

**21. Which of the following drugs is used as a prophylaxis for Meningococcal meningitis?**

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

**Answer: C**

**22. Antitussive drugs are used for?**

- A. Bronchial asthma
- B. Cystic fibrosis
- C. Nonproductive dry cough
- D. Pneumonia

**Answer: C**

**23. Regarding Isoniazid which is false?**

- A. Structurally related to Pyridoxine
- B. It is considered as the Most active Anti tuberculosis Agents
- C. water soluble
- D. It is large molecule
- E. All the mentioned

**Answer: D**

**24. Drugs that suppress cough may be used for?**

- A. cough of bronchial asthma

- B. dry cough that cannot be made productive
- C. cough caused by suppurative lesions in the airway
- D. cough in children
- E. cystic fibrosis

**Answer: B**

**25. All the following are considered as useful expectorants and mucolytic agents, EXCEPT?**

- A. water
- B. syrups
- C. codeine
- D. ipecacuanha
- E. Menthol

**Answer: C**

**26. A drug useful in the prophylactic treatment of bronchial asthma but lacks bronchodilator action?**

- A. Cromolyn sodium
- B. Ephedrine
- C. Isoproterenol
- D. Metaproterenol
- E. Metoprolol

**Answer: A**

**27. In the treatment of TB all of the following are considered primary or first-line drugs except?**

- A. Isoniazid (INH)
- B. Rifampin
- C. Ethionamide

- D. Ethambutol
- E. Streptomycin

**Answer: C**

**28. which statement is wrong about the mechanism of anti-TB agents?**

- A. INH blocks mycolic acid synthesis and consequently cell wall synthesis
- B. Rifampin inhibits RNA synthesis
- C. Streptomycin blocks the ability of 30S ribosomal subunit to make protein
- D. Para-amino-salicylic-acid is a folate synthesis antagonist
- E. Although related to Rifampin, Rifabutin inhibits cell wall synthesis

**Answer: E**

**29. KatG, is important in the activation of the following anti-TB drug?**

- A. Dapsone
- B. Isoniazid
- C. Rifampin
- D. Erythromycin
- E. Streptomycin

**Answer: B**

**30. Not an expectorant nor enhances mucociliary action?**

**Answer:** dextromethorphan (mostly)

**31. A condition where cough suppression is not used?**

**Answer:** cystic fibrosis (maybe)

**32. Wrong side effect:**

**Answer:** Codeine – diarrhea

**33. Most active, primary anti-TB agent?**

**Answer:** Isoniazid

**34. The agent metabolized by KatG, mycobacterial catalase?**

**Answer:** Isoniazid

**35. Primary anti-TB useful in meningococcal infection:**

**Answer:** Rifampin

**36. An old anti-TB agent that used to be a first-line drug but now is less commonly used:**

**Answer:** PAS

**37. A less potent Anti-TB inducer of CYP450 and is used with HIV patients using PI therapy:**

**Answer:** Rifabutin

**38. wrong about streptomycin:**

**Answer:** First effective anti TB.

**39. Rifabutin is used instead of Rifampin:**

**Answer:** Because Rifampin decreases antiviral activity.

**40. We use expectorants in all of the following except:**

**Answer:** Nonproductive cough.

# Physiology

# PHYSIOLOGY

**1- In diving, divers first hyperventilate before they go into water. This hyperventilation allows one to hold one's breath for a longer period of time, because hyperventilation:**

- a. increases the oxygen reserve of systemic arterial blood
- b. decreases the PCO<sub>2</sub> of systemic arterial blood
- c. decreases the pH of systemic arterial blood
- d. increases brain blood flow
- e. make alveolar air full of O<sub>2</sub> which divers can use while diving

**Answer:B**

**2- Which of the following decreases oxygen content but does not alter PaO<sub>2</sub> or percentage saturation of hemoglobin**

- a. Ascent to an altitude of 3500 m
- b. Polycythemia (high RBC count)
- c. Breathing 50% oxygen
- d. Anemia
- e. Development of a large right-to-left shunt

**Answer:D**

**3- In normal resting individual breathing room air at sea level, voluntary trebling (3x normal) of alveolar ventilation:**

- a. raises plasma pH.
- b. raises alveolar PCO<sub>2</sub> .
- c. trebles the partial pressure of oxygen in the alveoli.
- d. raises arterial blood oxygen saturation by 3 %.
- e. raises arterial blood oxygen content by 3 %.

**Answer:A**

**4- Decreased arterial PO<sub>2</sub> is a consequence of all the following EXCEPT :**

- a. breathing at high altitude .
- b. IRDS
- c. pulmonary edema
- d. COPD
- e. CO poisoning

**Answer:E**

**5- A 20-year-old male college student participates in a pulmonary study in his physiology lab. He is healthy and in good physical shape. He is asked to run on a treadmill for 20 minutes at a moderate pace, during which time his arterial PCO<sub>2</sub> is measured. What is his predicted arterial PCO<sub>2</sub> (in mm Hg) ?**

- a. 20
- b. 60
- c. 80
- d. 40

**Answer:D**

**6- In normal individual, regarding gas exchange across pulmonary capillaries during mild exercise, which of the following statements is TRUE?**

- a. CO<sub>2</sub> crosses the membrane easier than O<sub>2</sub>.
- b. Diffusing capacity of the lung for O<sub>2</sub> is more than for CO<sub>2</sub>, the most important factor to play role is the molecular weight of both gases.
- c. The length of capillary required for gas equilibrium is shorter during exercise.
- d. ABGs become grossly abnormal.
- e. Equilibrium across the respiratory membrane is never achieved.

**Answer:A**

**7- Hypoventilation causes one of the following changes in arterial blood gases:**

- a. Increase in arterial PO<sub>2</sub>, increase in arterial PCO<sub>2</sub>, and decrease pH
- b. Increase in arterial PO<sub>2</sub>, decrease in arterial PCO<sub>2</sub>, and increase pH
- c. Decrease in arterial PO<sub>2</sub>, decrease in arterial PCO<sub>2</sub>, and increase pH
- d. Increase arterial PO<sub>2</sub>, no change in arterial PCO<sub>2</sub>, and increase pH
- e. Decrease in arterial PO<sub>2</sub>, increase in arterial PCO<sub>2</sub>, and decrease pH

**Answer:E**

**8- In a normal person breathing 42% oxygen at rest for 10 minutes.**

- a. Pulmonary vascular resistance is more at rest compared to exercise.
- b. This person's mixed expired P<sub>CO2</sub> decreases.
- c. The entire lung becomes zone (1)
- d. Mixed venous [O<sub>2</sub>] increases significantly.
- e. O<sub>2</sub> extraction ratio is about 42%

**Answer:B**

**9- In normal person at rest, which of the following decreases arterial PO<sub>2</sub>**

- a. Polycythemia (high RBC count)
- b. CO poisoning
- c. Breathing 50% oxygen
- d. Anemia
- e. Ascent to an altitude of 3500 m

**Answer:E**

**10- Carotid bodies?**

- A} Respond only to increase/ decrease arterial pH
- B} Respond only to low/high PaO<sub>2</sub>
- C} stimulated by carbon monoxide
- D} having the lowest arterio-venous O<sub>2</sub> difference in our body
- E} Having the lowest blood flow in the body (ml/g/min)

**Answer: D**

**11- When will be happen to the partial pressures of O<sub>2</sub> and CO<sub>2</sub> when ascending to high altitude:**

- (a) PO<sub>2</sub> increases, and PCO<sub>2</sub> increases
- (b) PO<sub>2</sub> increases, and PCO<sub>2</sub> decreases
- (c) PO<sub>2</sub> decreases, and PCO<sub>2</sub> increases
- (d) PO<sub>2</sub> increases, and PCO<sub>2</sub> doesn't change
- (e) PO<sub>2</sub> decreases, and PCO<sub>2</sub> decreases

**Answer:E**

**13- A person carried out a few tests and found out that the O<sub>2</sub> saturation in the blood has decreased while the PaO<sub>2</sub> remained normal. This might be due to:**

- (a) Anemia
- (b) CO poisoning
- (c) Hypoventilation
- (d) Fibrosis
- (e) Exercise

**Answer:B**

**14- hyperventilation can result from:**

- a- increase alveolar Pco<sub>2</sub>



- b- increase alveolar  $P_{O_2}$
- c- decrease arterial  $P_{CO_2}$  below 30 mmHg
- d- direct stimulation of central chemosensitive receptors due to increase PH
- e- a decline of arterial  $P_{O_2}$  from 100 mmHg to 70 mmHg

Answer:A

**15-A patient with anemia has which of the following?**

- A. A normal arterial blood  $O_2$  content
- B. Arterial  $PO_2$  of 99 mmHG
- C. A decreased venous blood  $PO_2$
- D. Hyperventilation
- E. Cyanosis

**Answer: C**

**16-patient suffering from chronic respiratory failure:**

- A. Shows an increased respiratory sensitivity to  $CO_2$
- B. His ventilation doesn't increase in response to decreased  $O_2$
- C. Should be given 100%  $O_2$  on admission to hospital
- D. Must have been given  $O_2$  if his  $pCO_2$  greatly increased
- E. Shows an increased blood pH

**Answer:D**

**17-A patient has the following arterial blood values:  $pH=7.52$   $pCO_2=20$  mmHg  $HCO_3^-=16$  mEq/L. He most likely:**

- A. Hypo-ventilating
- B. Has an acid base disorder caused by over-production of fixed acid
- C. Has a respiratory alkalosis
- D. Has a complete respiratory compensation
- E. Has renal compensation that causes his arterial  $HCO_3^-$  to increase

**Answer: C**

**18-Oxygen therapy is of great benefit in which of the following types of hypoxia:**

- A. Hypoxia caused by anemia
- B. Hypoxia caused by circulatory deficiency
- C. Shunting of un-oxygenated venous blood past the lungs
- D. Tissue metabolic enzyme system is incapable of using O<sub>2</sub>
- E. Hypoxia caused by impaired alveolar membrane diffusion

**Answer: E**

**19-All of the following parameters are decreased on ascending to high altitude except:**

- A. Arterial pO<sub>2</sub>
- B. Alveolar air pCO<sub>2</sub>
- C. Hb % saturation
- D. Systemic arterial pH
- E. Arterial O<sub>2</sub> content

**Answer: D**

**20 In an individual the ventilation didn't increase when the inspired pCO<sub>2</sub> was increased, but decreased during increased inspired pO<sub>2</sub>. Which of the following is most likely the cause for this response in ventilation:**

- A. Dysfunctional central chemoreceptors
- B. Hypersensitivity of the peripheral chemoreceptors
- C. Bronchial muscle spasm
- D. Diaphragmatic fatigue
- E. Normal functioning of the central and peripheral chemoreceptors

**Answer: A**

**21- Carbon monoxide can lead to hypoxia , by:**

- a. Changing the Hb conformation
- b. Increasing the level of methemoglobin in blood
- c. Competitively binding at heme iron site
- d. Acting as allosteric inhibitor for Hb
- e. Oxidizing heme iron in Hb

**Answer: C**

**22-Stimuli or conditions that would tend to increase ventilation include :**

- a . Lower than normal blood PCO<sub>2</sub>
- b . Higher than normal blood PH
- c. Breathing carbon monoxide
- d. Iron- deficiency anemia
- e . Breathing air with reduced PO<sub>2</sub>

**Answer: E**

**23- Breathing :**

- a. Is not dependent on nervous impulses
- b. Is a chemical process by definition
- c. Depends on the ability of cells to oxidize materials .
- d. Is best described as mechanical process
- e. Cannot be voluntary controlled

**Answer: D**

**24-Rapid forced breathing:**

- a. Is called hyperventilation
- b. Induced a state of alkalosis
- c. Induces a state of acidosis
- d. A and B are correct
- e. A and C are correct

**Answer: D**

**25-Peripheral chemoreceptors:**

- a) Respond only to increased/decreased H<sup>+</sup>
- b) Respond only to low O<sub>2</sub>.
- c) Stimulated by carbon monoxide
- d) Having the lowest arterio-venous O<sub>2</sub> difference in our body

e) Aortic bodies innervated by glossopharyngeal nerve

**Answer: D**

**26- At high altitude the following changes take place EXCEPT:**

- a) Increase alveolar PCO<sub>2</sub>
- b) Increase ventilation
- c) Increase respiratory rate
- d) Increase in O<sub>2</sub> carrying capacity of blood
- e) Decrease alveolar PO<sub>2</sub>

**Answer:A**

**27-During mild exercise:**

- a) PaO<sub>2</sub> declines
- b) PaCO<sub>2</sub> increases
- c) O<sub>2</sub> consumption reaches its maximum (VO<sub>2</sub>max)
- d) Whole body arteriovenous oxygen concentration difference increases.
- e) The time an RBC stays in the pulmonary capillary remains the same

**Answer:C**

**28-Hyperventilation can result from:**

- a- increase alveolar Pco<sub>2</sub>
- b- increase alveolar Po<sub>2</sub>
- c- decrease arterial Pco<sub>2</sub> below 30 mmHg
- d- direct stimulation of central chemosensitive receptors due to increase PH
- e- a decline of arterial Po<sub>2</sub> from 100 mmHg to 70 mmHg

**Answer:A**

**29-Which of the following will return toward normal few weeks following ascending to high altitude (and stay at the top of the mountain)?**

- a. Arterial hydrogen ion concentration
- b. Arterial carbon dioxide tension
- c. Arterial bicarbonate ion concentration

d. Arterial hemoglobin concentration

e. Alveolar ventilation

**Answer: A**

**30- Hypoxic hypoxia mainly attributed to:**

A. Respiratory membrane thickness

B. Increased distance between alveolar and capillary distance

C. Decreased partial pressure of O<sub>2</sub> in atmosphere

D. Increased red blood cells in pulmonary arterioles

E. Increased PO<sub>2</sub> in inspired air

**Answer: C**

**31- Blood gas measurements in a hypoxic patient indicate that the patient's systemic arterial oxygen concentration is normal and his systemic venous oxygen content is higher than normal. This is characteristic of:**

A. diffusion limitation

B. right-to-left shunt (mixing venous blood with arterial blood)

C. pulmonary ventilation/perfusion mismatch

D. anemic hypoxia (low Hb concentration)

E. histotoxic hypoxia (septicemia)

**Answer: E**

# Histology

- 1) Dust cells in respiratory system, all the following statements are correct except :
  - a) They are transported from the bronchioles into the pharynx via the ciliary action of the respiratory epithelium
  - b) They are the most numerous of all cell types, and eliminated from the lungs at a rate 50 million per day
  - c) Often noted in the respiratory membrane
  - d) They are derived from monocytes, enters the lungs via the blood stream
  - e) They are found also in the connective tissue around the blood vesseles and in the pleura
- 2) Type II alveolar cell characterized by all of the following except :
  - a) they have occluding and desmosomal junction with type I alveolar cells
  - b) They are cuboidal cells, rest on basement membrane and commonly found in the angle of alveolar wall
  - c) They contains secretory granules in their cytoplasm which secretes proteolytic enzymes
  - d) They exhibit a characteristic lamellar bodies
  - e) divided by mitosis to replace their own population and also type I alveolar cells
- 3) Type II alveolar cells are associated with all of the following EXCEPT:
  - a) They form 16% of the interalveolar septum
  - b) They form 8% of the alveolar wall
  - c) They contain in their cytoplasm lamellar bodies
  - d) They have the ability to regenerate their own type as well as type I cells
  - e) They are connected to type I alveolar cells by occluding junctions and desmosomes
- 4) All of the following cells are located in the olfactory region of the nose EXCEPT:
  - a) Pseudostratified ciliated columnar epithelium
  - b) Sustentacular cells
  - c) Olfactory cells
  - d) Bowman's gland
  - e) Goblet cells
- 5) All of the following are present in the olfactory region EXCEPT:
  - a) Bipolar cells
  - b) Bowman serous gland
  - c) Von Ebner gland + seromucous secretion.
  - d) Basal cells
- 6) psuedostrtified ciliated columnar epithelium lining all of the following except:
  - a) infraepiglottis
  - b) vestibular fold
  - c) conducting bronchiol
  - d) superior part of nasal cavity (or olfactory part) e- nasopharynx
- 7) which is not present in the blood-air barrier?
  - a) cytoplasm of endothelial cells
  - b) cytoplasm of alveolar cells
  - c) fused basal lamina
  - d) surfactant e-thickness of 0.1 - 1.5 millimeter
- 8) All of the following is lined by Pseudostratified columnar epithelium with goblet cells except?
  - a) Olfactory region
  - b) End of terminal bronchiole
  - c) posterior surface of epiglottis D- False vocal cord
- 9) Which of the following is not found in the respiratory membrane?
  - a) Surfactant layer
  - b) Type II pneumocyte
  - c) Type 1 pneumocyte
  - d) Endothelial cell
  - e) Fused basal lamina
- 10) Functionally the important microscopic anatomy of the lung consist of what is called a respiratory membrane, which consist of?

- a) The epithelium of the alveolus
- b) An alveolar basement membrane
- c) A capillary basement membrane
- d) The Endothelium of the capillary
- e) All of the above

11) Most Inspired particles such as dust fail to reach the Lung because of the:

- a) Ciliated mucous lining in the nose
- b) porous structure of the nasal conchae
- c) Abundant blood supply to nasal mucosa
- d) Action of the epiglottis
- e) None of the above

12) Which of the following is false regarding secondary bronchi?

- a) They have complete muscular layer
- b) Cartilage plates gradually disappear
- c) Goblet cells are rarely seen

13) Pseudo stratified columnar epithelium with goblet cell found in all of these regions except?

- a) internal epiglottis
- b) intrapulmonary secondary bronchus
- c) terminal bronchi
- c) trachea

14) Macrophages, all of the following is correct except?

- a) They are transported from the bronchioles into the pharynx via the ciliary action of the respiratory epithelium
- b) They are the most numerous of all cell types
- c) Often noted in the respiratory membrane
- d) They are derived from monocytes, enters the lungs via the blood stream
- e) They are found also in the connective tissue around the blood vessels and in the pleura

15) All of the following cells is found in the interstitium except?

- a) Endothelium
- b) Fibroblasts
- c) mast cells
- d) dust cells
- e) Type 1 pneumocytes

16) Region that has columner epithelium with muscle but without cartilage: bronchioles 14- Wrong about Type II cells: have proteolytic enzyme granules

17) Wrong about Lung: Type I alveolar cells are most abundant

18) Most numerous cells in the lungs: dust cells

19) wrong about clara cells: they exist rarely in the respiratory bronchioles

20) Wrong about terminal bronchioles: have few glands in the lamina Propria

21) what is wrong about dust cell/macrophages: present in respiratory membrane 20- wrong about trachea: Posteriorly covered by striated trachealis muscle.

22) wrong about clara cells: They aren't present in terminal bronchioles.

1	C	4	E	7	E	10	E	13	C
2	C	5	C	8	B	11	A	14	C
3	B	6	D	9	B	12	C	15	E

23) the interalveolar septum contains type-1 alveolar cells, in which of the following percentages?

- A} 16%
- B} 8%
- C} 97%
- D} 3%
- E} 36%

answer: b



**Embryology**

+

**Microbiology**

Micro :

- 1) The most common cause of community-acquired pneumonia is?
  - a) Streptococcus mitis
  - b) Legionella pneumophila
  - c) Coxiella burnetii
  - d) Streptococcus pneumonia
  - e) Moraxella catarrhalis
- 2) A 6-year-old boy diagnosed with viral pharyngitis, what's the most likely causative agent?
  - a) Influenza C
  - b) Rhinovirus
  - c) Adenovirus
  - d) Metapneumovirus
  - e) RSV
- 3) in a suspected case of viral respiratory tract infection, the laboratory method of choice for diagnosis is?
  - a) Viral culture
  - b) Viral antigen testing
  - c) Nucleic acid sequencing
  - d) Multiplex real-time PCR
  - e) serologic testing to detect the presence of neutralizing antibodies
- 4) The most common causative agent of viral rhinosinusitis (common cold) is?
  - a) A DNA virus with a low mutation rate
  - b) A DNA virus that can be prevented by an effective vaccine
  - c) A RNA virus that can be prevented by an effective vaccine
  - d) A naked (non-enveloped) RNA virus with more than 150-serotypes
  - e) An enveloped RNA virus with segmented genome that can cause pandemic through antigenic shift
- 5) Bronchiolitis is a common lower respiratory tract infection in infants, the most common cause of this infection is?
  - a) Rhinovirus
  - b) Adenovirus
  - c) Coronavirus
  - d) Parainfluenza virus
  - e) Respiratory syncytial virus
- 6) The most common cause of bronchiolitis is
  - a) Adenovirus
  - b) parainfluenza
  - c) Coxsackie A
  - d) RSV
- 7) One of these organisms causes common cold but has too many serotypes to develop a beneficial vaccine:
  - a) Rhinovirus
  - b) Parainfluenza virus
  - c) RSV
  - d) Human coronavirus
- 8) Generally, antibiotics are not commonly used in upper respiratory tract infections because:
  - a) They are mostly caused by resistant strains
  - b) Most of them are viral infections
  - c) They are mild infections with minimal symptoms
- 9) What is the best management for rhinovirus infections?

- a) Antiviral therapy with ribavirin
  - b) Antiviral therapy with tenofovir
  - c) Systemic corticosteroids
  - d) Supportive therapy
  - e) Salbutamol
- 10) Croup and steple sign are caused by:
- a) Acute rhinosinusitis
  - b) Bronchiolitis
  - c) Laryngotracheobronchitis
  - d) Bacterial tracheitis
- 11) A patient is present with barky cough along many other symptoms and was diagnosed as having croup. The isolated causative agent would be from which family?
- a) Orthomyxoviridae
  - b) Paramyxoviridae
  - c) Coronaviridae
- 12) Which of the following coronaviruses causes severe respiratory infection?
- a) SARS
  - b) OC43
  - c) 229E
- 13) The most common cause of Rhinosinusitis is
- a) Enveloped single stranded RNA
  - b) Naked Double stranded RNA
  - c) Enveloped double stranded DNA
  - d) Naked single stranded RNA
- 14) A 65-year-old female patient, presented to E/R with fever, shortness of breath and generalized weakness for 2-day duration. Viral infection of the lower respiratory tract was suspected. The most appropriate test to help in identification of the causative agent would be :
- a) Viral culture
  - b) Multiplex real-time polymerase chain reaction
  - c) Antigen detection
  - d) Lung biopsy
  - e) Serologic testing
- 15) Which one of the following statements about common cold is TRUE ?
- a) The mortality rate is high .
  - b) The incubation period is about 4 weeks for the majority of causative agents .
  - c) Host response plays a greater role compared to direct virus destruction of nasal mucosa .
  - d) The most common isolated virus is metapneumovirus .
  - e) Antiviral therapy is required .
- 16) The most common and important viral agent in croup (laryngotracheobronchitis) is :
- a) . Respiratory syncytial virus (RSV)
  - b) Bocavirus
  - c) Rhinovirus.
  - d) Parainfluenza virus
  - e) . Adenovirus

1	2	3	4	5	6	7	8
d	c	d	d	e	d	a	b
9	10	11	12	13	14	15	16
d	c	b	a	a	b	c	d

Embryo :

- 1) Laryngeal atresia, all of the following statements are correct except :
  - a) Prenatal ultrasonography permits diagnosis of these anomalies
  - b) It is a rare anomaly
  - c) Distal to atresia the airways become constricted
  - d) It is accompanied with fetal ascites
  - e) It is known as congenital high airway obstruction syndrome
- 2) During early development of the respiratory system the laryngotracheal tube maintains in communication with the primitive foregut. Which of the following embryonic structure is responsible for partitioning these two embryonic structure ?
  - a) Laryngotracheal diverticulum
  - b) Tracheoesophageal septum
  - c) Tracheoesophageal fistula
  - d) Laryngotracheal septum
  - e) Tracheoesophageal fold
- 3) Concerning the maturation of the lung, all the following statements are correct EXCEPT :
  - a) The growth of lungs after birth is mainly due to an increase in the number of alveoli.
  - b) In the terminal sac period, respiration is impossible.
  - c) At the end of the 6th-month type I and type II alveolar cells are developed
  - d) The canalicular period lasts from the 16th to the 26th weeks.
  - e) In pseudoglandular period, no respiratory bronchioles or alveoli is present .
- 4) The laryngotracheal groove is formed during:
  - a) 2nd week of pregnancy (
  - b) 4th week of pregnancy
  - c) 6th week of pregnancy
  - d) 5th week of pregnancy (
  - e) 7th week of pregnancy
- 5) Which of the following conditions are associated with oligohydramnios:
  - a) Laryngeal atresia
  - b) Tracheoesophageal fistula (
  - c) Congenital cyst of the lung
  - d) Ectopic lung lobe
  - e) Pulmonary hypoplasia
- 6) An x-ray was done to a child one day after birth. The x-ray showed peripheral opaque areas in the lung. What is the most common cause of such a condition?
  - a) Collapsed lung due to traumatic delivery (
  - b) Congenital absence of surfactant
  - c) Congenital absence of the alveoli
  - d) Obstruction of the distal airways
  - e) This is a normal condition, where the alveoli will inflate several days after delivery
- 7) the development of the tracheoesophageal septum occurs at week:
  - a) 2
  - b) 3
  - c) 4
  - d) 5
  - e) 6

- 8) Oligohydramnios is associated with?
- Ectopic lung lobes
  - Lung hypoplasia
  - Lung agenesis
  - ARDS
- 9) Wrong about ARDS
- Thyroxine is the most important stimulator
  - Causes collapsing of the alveoli
  - Accounts for 2% of death in neonates
- 10) A peremture baby usually has difficulty breathing, However the respiratory system devolped enough for survival by:
- 17 weeks
  - 24 weeks
  - 28 week
  - 36 weeks
  - none of the above
- 11) With development of the nose, the philtrum of the upper lip is developed from which of the following?
- Frontonasal prominence
  - Maxillary prominence
  - Lateral nasal prominence
  - Medial nasal prominence
  - Palatal Prominence
- 12) An x-ray was done to a child one day after birth. The x-ray showed peripheral opaque areas in the lung. What is the most common cause of such a condition?
- Collapsed lung due to traumatic delivery
  - Congenital absence of surfactant
  - Congenital absence of the peripheral alveoli
  - pleural effusion (fluid in the pleural cavity)
  - This is quite normal condition, where the alveoli will inflate several days after delivery
- 13) In the development of respiratory tract organs which of the following abnormality could be result with oligohydramnios's?
- Respiratory distress syndrome
  - Atelectasis
  - Pulmonary hypoplasia
  - Lung agenesis
  - Congenital cyst of the lung

1	2	3	4	5	6	7	8	9	10
c	b	b	b	e	e	c	b	c	C
11	12	13							
d	e	c							

**Pbl**

# PBL PAST PAPER

1)- A 4-month-old infant complaining of coughing, shortness of breath and wheezing, the symptoms were preceded by nasal discharge 2-days earlier, he is afebrile, what is the most likely clinical

diagnosis of the condition?

- A} Bronchial asthma
- B} Bacterial pneumonia
- C} Viral bronchiolitis
- D} Viral laryngotracheobronchitis
- E} Viral pharyngitis

Ans:C

2)- A 5-year-old child present with high grade fever for 5 days, shortness of breath and cough, physical examination revealed decreased air entry, bronchial breathing sound and dullness percussion on the right side of his chest, what's the most appropriate treatment of his condition?

- A} Inhaled corticosteroid
- B} Intravenous corticosteroid
- C} Intravenous ceftriaxone
- D} Inhaled gentamycin
- E} Inhaled salbutamol

Ans:C

3)- 2 years child presents to the pediatric clinic with dry barking cough and loud breathing sound during inspiration. This was associated with low grade fever and nasal discharge. On physical examination, the child had inspiratory stridor, hoarseness of voice, and signs of respiratory distress. According to this clinical profile, which part of the respiratory system is likely to be affected by this pathology?

- A} Terminal bronchioles
- B} Lung parenchyma
- C} Larynx and upper trachea
- D} Lung interstitial tissue
- E} Paranasal sinuses

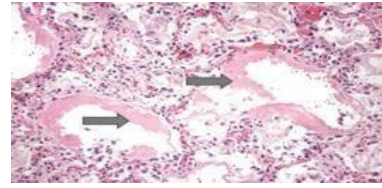
Ans:C

# Labs



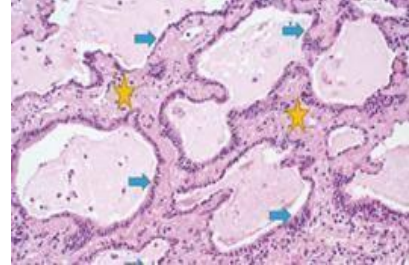
**1) These clear structures represent:**

- ARDS



**2) True about this pathological section :**

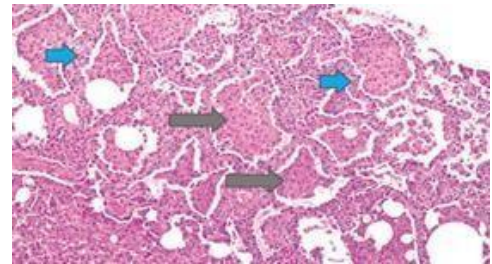
- Diagnosed by exclusion
- Macroscopic shows cobblestones appearance
- Caused mainly by occupational hazard
- You can't know the origin of the disease



**Answer: d**

**3) This section shows:**

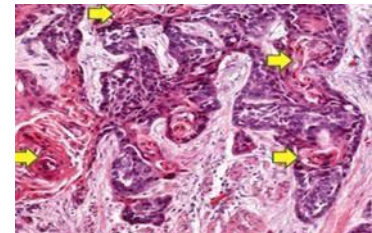
- severe restrictive abnormality
- moderate restrictive abnormality
- mild restrictive abnormality
- mild eosinophilia



**Answer: c**

**4) Smoker for 15 years, choose the right answer about this case**

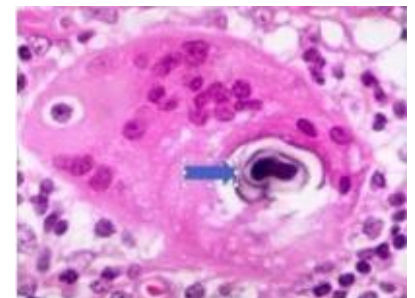
- Something about squamous cell carcinoma



**5) Regarding the pointed structure in the figure below, one of the following statements is CORRECT :**

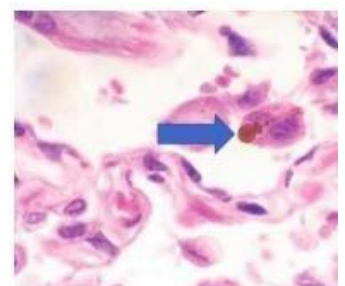
- Specific for sarcoidosis
- Can be seen in granulomas related to tuberculosis
- Made of shed epithelial cells
- Desmosomes connecting squamous cells
- Stellate structures within a macrophage

**Answer: B**



**6) Which of the following is true regarding the pointed structure or the disease causing it?**

- Made of hemosiderin containing proteinaceous material
- Progressive worsening dyspnea
- Increased lung compliance
- The risk of lung cancer is not increased
- Caseating granuloma is characteristic

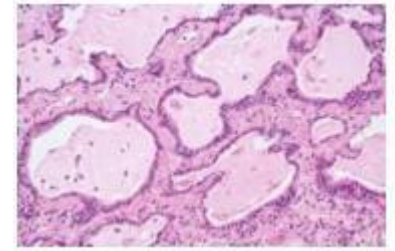


**Answer: A,b**

7) histologic findings in the figure below, one of the following statements is CORRECT :

- a. The etiology of the underlying disease is difficult to be determined
- b. The etiology of the underlying disease is always related to granulomatous diseases
- c. The etiology of the underlying disease is always related to smoking related diseases
- d. The etiology of the underlying disease is always related to atelectasis

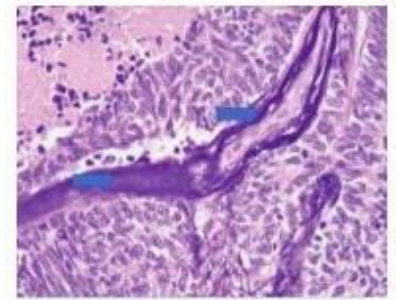
Answer: A



8) Which of the following is true regarding the disease shown in the following section:

- a. The arrows point to desmosomes .
  - b. Grow as mucosal plaques that penetrates bronchial wall .
  - c. Associated with cigarette smoking .
  - c. Strongly related to asbestos exposure . e.
- The tumor is most likely cured by surgery

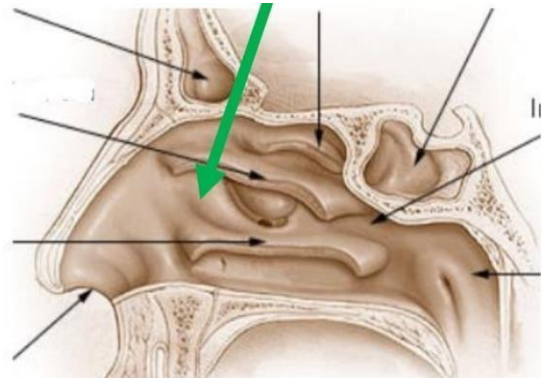
Answer: C



1) Name the green pointed bone.

- a. Lacrimal bone
- b. perpendicular plate of palatine bone
- c. ethmoidal bone
- d. lateral pterygoid plate of sphenoid

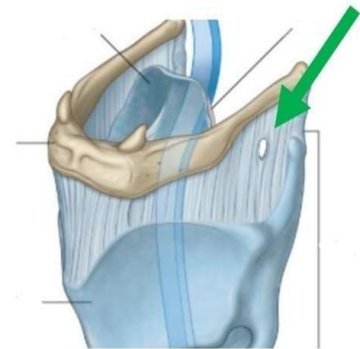
Answer: A



2) Which of the following passes through the opening

- a. Inferior laryngeal artery
- b. External laryngeal nerve
- c. Internal laryngeal nerve
- d. Superior thyroid artery

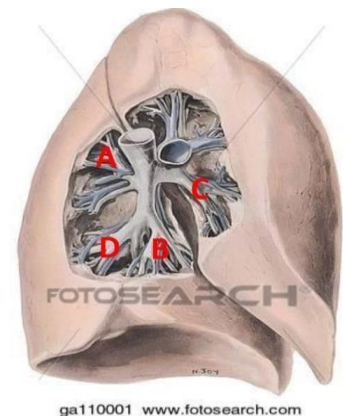
Answer: C



3) A stupid dentist drops something into your mouth while you are sitting, where will it go?

- a. A
- b. B
- c. C
- d. D

Answer: C

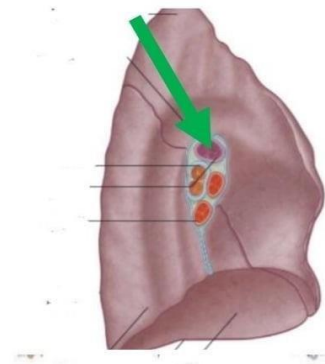


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4) The pointed structure is:

- a. Pulmonary vein
- b. Pulmonary artery
- c. Ep arterial bronchus
- d. Hyp arterial bronchus

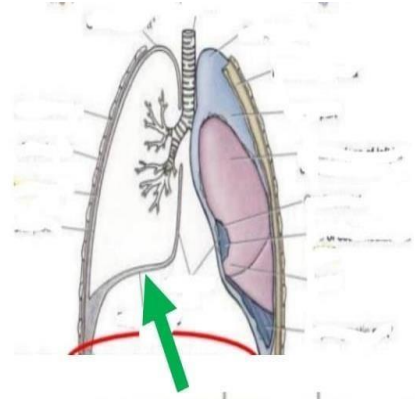
Answer: B



5) The green surface is supplied by which nerve?

- a. Intercostal nerves
- b. Phrenic nerve
- c. pulmonary plexus

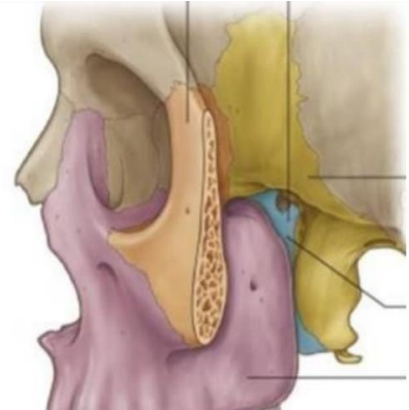
Answer: B



6) Which of the following isn't found in this fossa?

- a. Maxillary nerve
- b. Pterygopalatine ganglia
- c. Sphenopalatine nerve
- d. First part of the maxillary artery

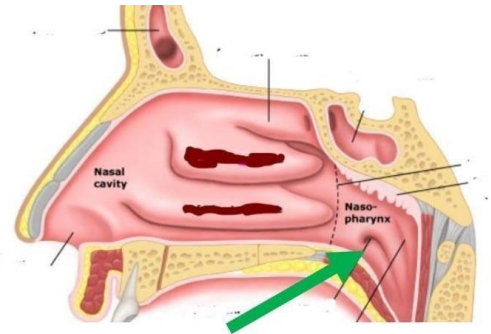
Answer: D



7) The pointed opening is:

- a. Sphenoid Air sinus
- b. Bulla ethmoidalis
- c. Eustachian tube
- d. Middle meatus

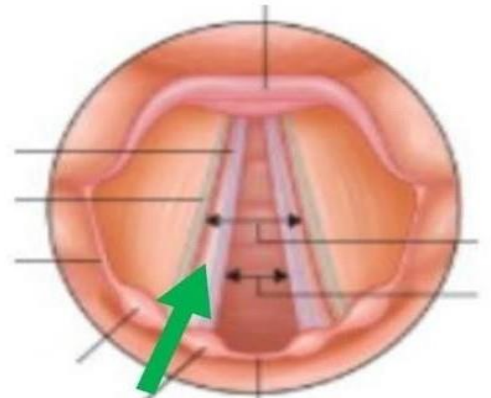
Answer: C



8) Which of the following is wrong about the pointed structure?

- a. It has a smooth muscle
- b. no blood vessels
- c. no lymph drainage
- d. it is lined by oral epithelium

Answer: A

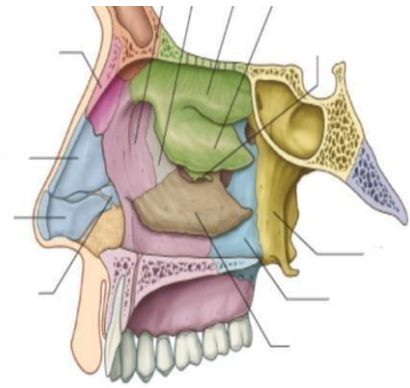




9) Which bone is not found in this figure

- a. ethmoid
- b. lateral plate of pterygoid
- c. perpendicular plate of palatine
- d. lacrimal bone

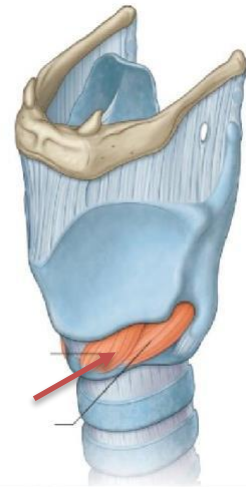
Answer: B



10) What nerve supplies the pointed structure?

- a. internal laryngeal nerve
- b. external laryngeal nerve
- c. recurrent laryngeal nerve

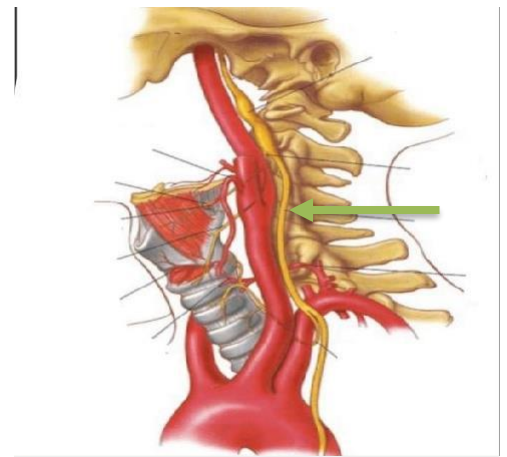
Answer: B



11) What is the pointed structure?

- a. vagus nerve
- b. sympathetic chain
- c. phrenic nerve

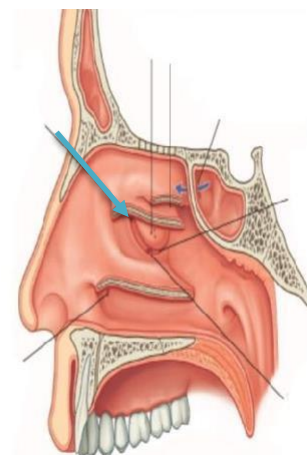
Answer: A



12) Which sinus drains in this opening?

- a. maxillary
- b. posterior ethmoidal
- c. anterior ethmoidal

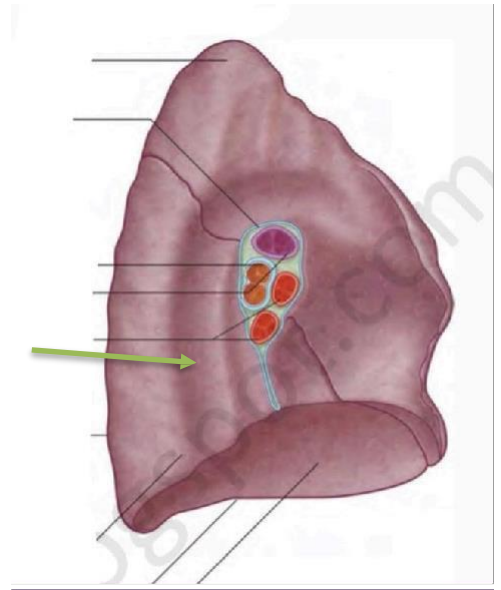
Answer: C



13) Pointed impression is of:

- a. trachea
- b. inferior vena cava
- c. esophagus

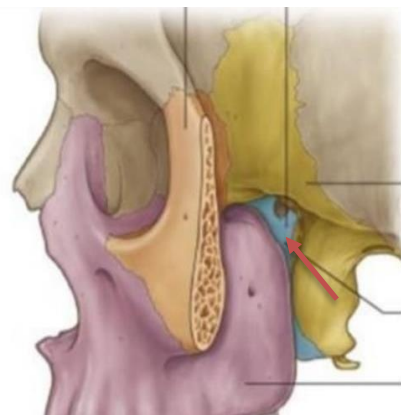
**Answer: C**



14) What structure leaves the pointed fossa to the infratemporal fossa?

- a. Maxillary artery
- b. maxillary nerve
- c. sphenopalatine nerve

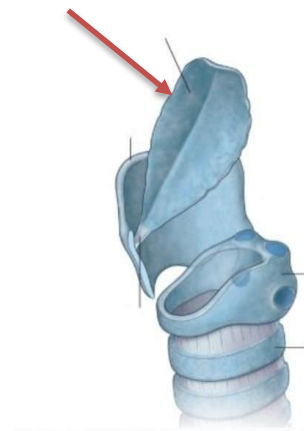
**Answer: B**



15) All of the following are attached to the pointed structure except:

- a. thyroepiglottic ligament
- b. quadrangular membrane
- c. conus elasticus

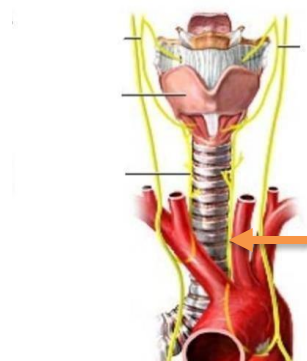
**Answer: C**



16) Which of the following is associated with the pointed structure?

- a. Superior thyroid artery
- b. Inferior thyroid artery

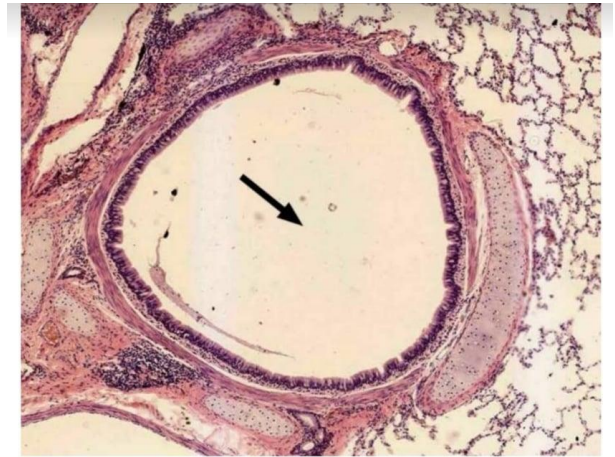
**Answer: B**



17) This section was taken from:

- a. Trachea
- b. Primary bronchus
- c. Secondary bronchus
- d. Tertiary bronchus

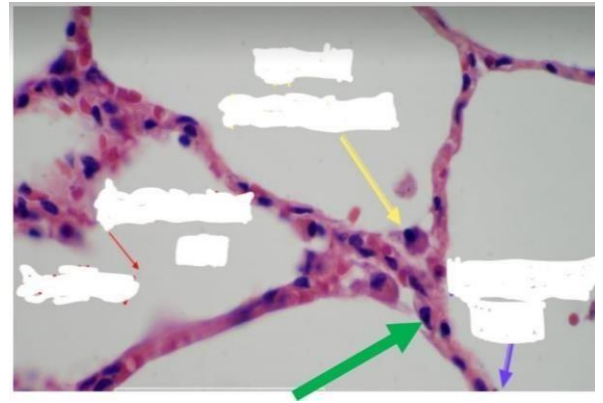
**Answer: C**



18) The green arrowed cell represents:

- a. Type I pneumocyte
- b. Type II pneumocyte
- c. Endothelial cell
- d. none of the above

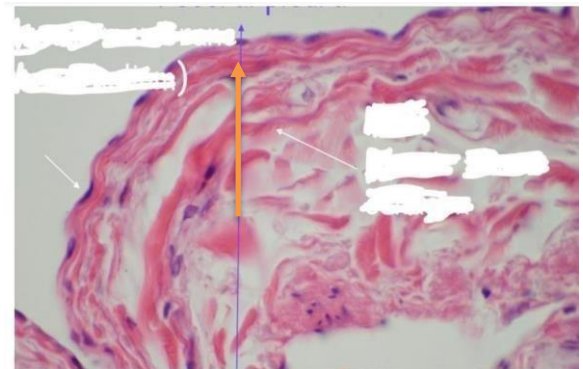
**Answer: A**



19) The orange arrow represents:

- a. Mesothelium
- b. Hyaline cartilage
- c. Elastic fibers
- d. Endothelium

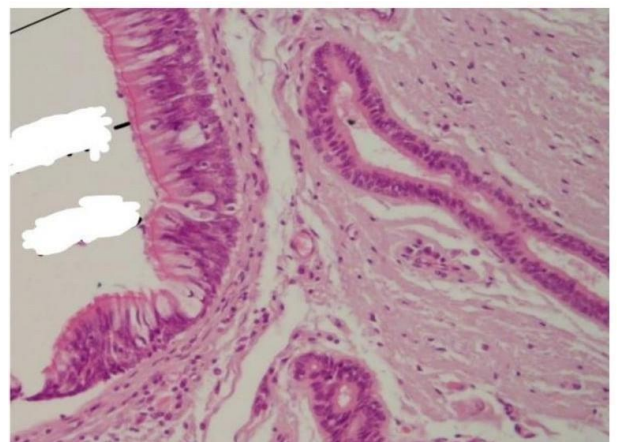
**Answer: A**



20) Which of the following doesn't exist in this picture?

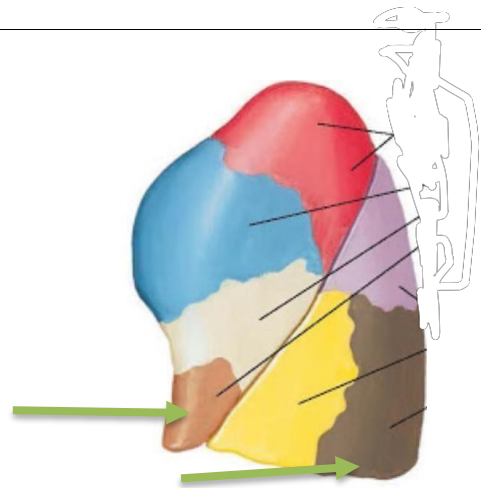
- a. Loose connective tissue
- b. pseudostratified ciliated columnar
- c. Goblet cells
- d. hyaline cartilage

**Answer: D**



**21) the pointed structures are:**

- inferior lingual + lateral basal segments



**22) Tracheal section showing mucosa and submucosa only – Structure not seen in this section**

- hyaline cartilage

**23) Section of intrapulmonary airway, with circular lumen, two cartilages, folded epithelium and abundant smooth muscle**

- tertiary bronchus

**24) Section of alveolar duct – pointed structure is**

- smooth muscle (knob of alveolar opening)

**25) which of the following is not present (true vocal cord)**

- respiratory epithelium

**26) All of the following structures are present except (posterior section in the trachea)**

- seromucous glands

**27) Which of the following pass through the pointed foramin to the nasal cavity :**

- Greater palatine artery .
- Anterior superior alveolar artery
- Nasopalatine nerve
- Sphenopalatine artery
- Greater palatine nerve



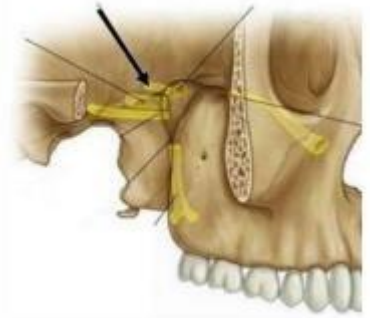
**Answer: A**



28) Which of the following structures passes through the canal indicated with the arrow?

- a. Sphenopalatine vessels .
- b. Orbital vessels .
- c. Maxillary vessels .
- d. Palatine vessels .
- e. Pharyngeal vessels .

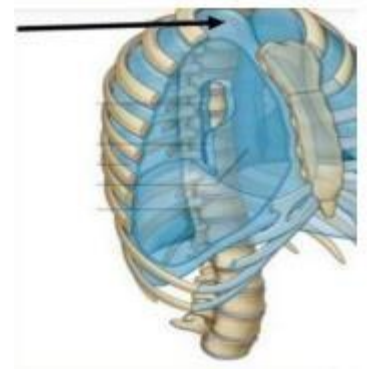
Answer: E



29) The pointed part of the pleura is innervated by:

- a. Intercostal nerves .
- b. Phrenic nerve .
- c. C7-spinal nerve .
- d. Vagus nerve .
- e. Greater splanchnic nerve .

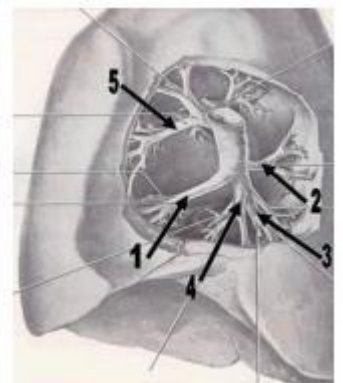
Answer: A



30) A foreign body was inhaled by a kid. It will most likely reach point:

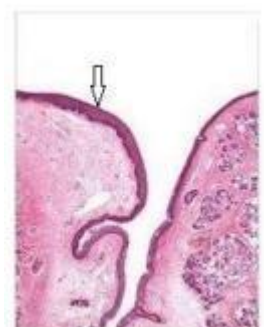
- a. 4
- b. 3
- c. 2
- d. 5
- e. 1

Answer: B



31) Identify the type of epithelium indicated with the arrow:

- a. Simple cuboidal ciliated epithelium.
- b. Pseudostratified ciliated columnar epithelium.
- c. Pseudostratified ciliated columnar epithelium with goblet cell.
- d. Simple columnar ciliated epithelium with goblet cell.

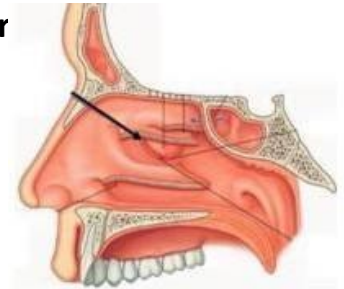


e. Stratified squamous epithelium non-keratinized.

**Answer: E**

**32) Which one of the following sinuses drains into the pointed ar**

- a. Anterior ethmoidal .
- b. Posterior ethmoidal .
- c. Frontal .
- d. Maxillary .
- e. Middle ethmoidal



**Answer: C**

**33) Identify this section:**

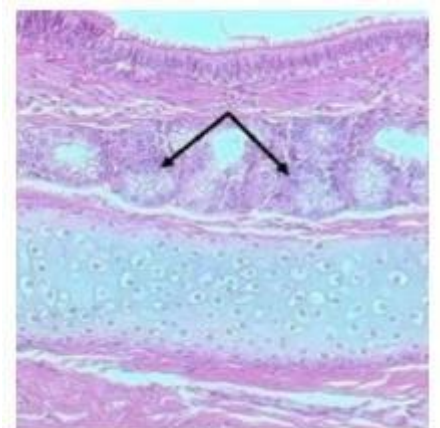
- a. Intra-pulmonary tertiary bronchus .
- b. Conducting bronchiole .
- c. Extra-pulmonary secondary
- d. Respiratory bronchiole
- e. Trachea



**Answer: A**

**34) Identify the pointed structure :**

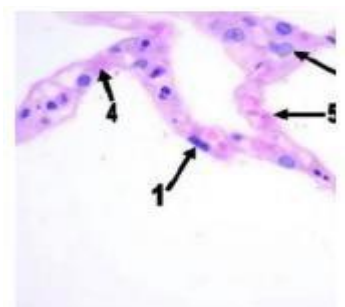
- a. Seromucous glands.
- b. Intestinal glands.
- c. Hyaline Cartilage.
- d. Blood vessels in mucosa.
- e. Gastric glands.



**Answer: A**

**35) Identify which of the following cells secretes the surfactant:**

- a. 4
- b. 1
- c. 5



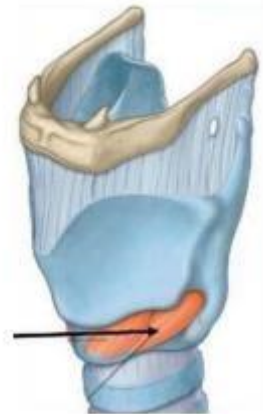
d.2

e.3

**Answer: E**

**36) Injury of the nerve supply of the pointed muscle, causes one of the following :**

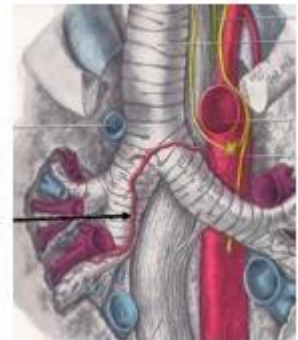
- a. Abduction of the vocal cord.
- b. Weakness of the vocal cord.
- c. The vocal cord becomes tense.
- d. Adduction of the vocal cord.
- e. Tilting of the thyroid cartilage forward



**Answer: B**

**37) Identify the pointed structure:**

- a. Inferior thyroid artery.
- b. Bronchial artery.
- c. Recurrent laryngeal nerve.
- d. Pulmonary vein.
- e. Pulmonary artery.

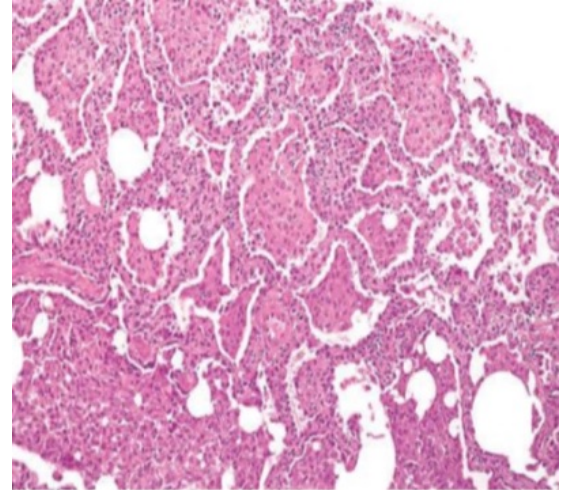


**Answer: B**

## Pathology lab (019)

9) the figure below shows a lung biopsy from a 44-year-old smoker man, the tissue section below was stained with iron stain and showed no hemosiderin deposition, based on your identification and your best diagnosis choose the correct statement.

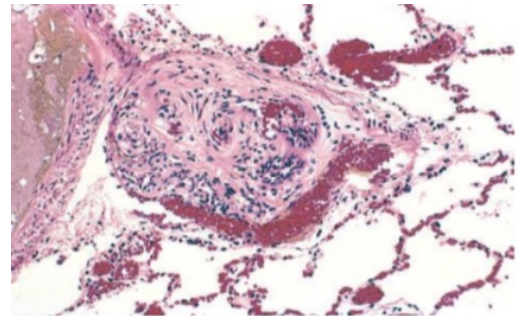
- a. This disease is associated with extensive pulmonary fibrosis
- b. This disease carries a good prognosis in general
- c. increased pulmonary arterial pressure is characteristic
- d. tissue culture is mandatory for the diagnosis
- e. full body radiograph scans are essential to stage the disease



**Answer: B**

10) According to your identification of the lesion in the figure below, your best diagnosis is?

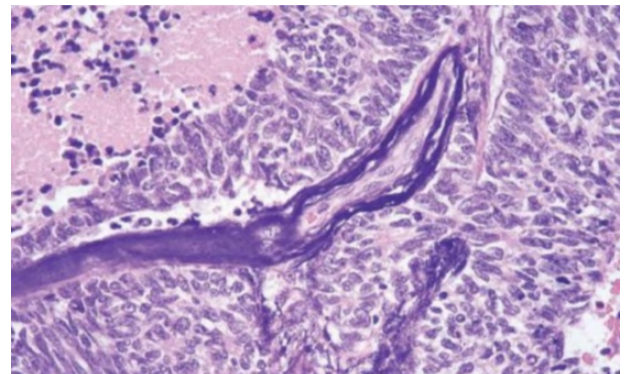
- a. Sarcoidosis
- b. Coal worker pneumoconiosis
- c. Pulmonary arterial hypertension
- d. Goodpasture syndrome
- e. Pulmonary thromboembolism



**Answer: C**

11) case about man, heavy smoker, presented to the clinic with nausea, vomiting and malaise. A clinical history and physical examination and lab results revealed signs and symptoms consistent with the syndrome of inappropriate antidiuretic hormone. A chest X-Ray showed an ill-defined 5 cm mass involving the left hilum of the lung, lung biopsy was performed and captured in the figure below, based on your diagnosis, which of the following statement is CORRECT?

- a. surgery is a curative treatment
- b. It's an asbestos related tumor
- c. Early involvement of lymph nodes
- d. It's an undifferentiated tumor
- e. This tumor never metastasize



**Answer: C**

## Physiology lab:

1) You did a spirometry test to a patient. The test was reproducible and acceptable and it is done 3 times. A table of results show that  $FEV_1/FVC=90\%$ ,  $FVC$  of predicted =  $72\%$ . What to do next?

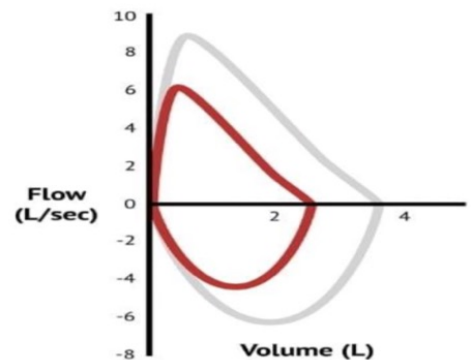
- a. Repeat the test again
- b. It is normal
- c. give bronchodilator and repeat
- d. Do methacholine challenge test
- e. Complete pulmonary function test is needed

**Answer: E**

2) This flow volume loop represents:

- a. COPD
- b. restrictive lung disease
- c. asthma

**Answer: B**



3) A normal person with  $VC = 3.5L$   $IC = 2L$   $V_t = 0.5L$   $FRC = 2.5L$ , find his ERV

- a. 1.5 L
- b. 1 L
- c. 2.5 L

**Answer: A**

4) The volume in the lung after normal inspiration:

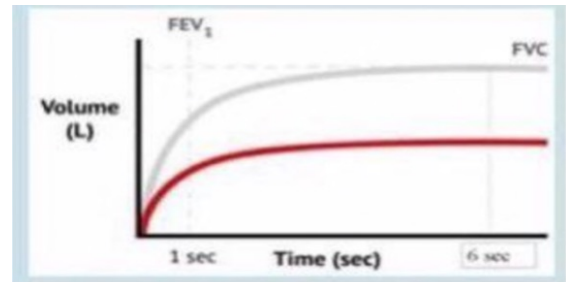
- a. tidal volume
- b. vital capacity
- c. inspiratory reserve volume
- d. total lung capacity
- e. none of the above

**Answer: E**



5) What pattern is suggested by the following volume-time graph (red curve)?

- a. Chronic obstructive pulmonary disease (COPD)
- b. The patient stopped exhaling too early
- c. Asthma
- d. Restrictive disease
- e. The patient re-inhaled some air during the test



Answer: D

6) have a 15-year-old thin and tall male patient who presents with a three-month history of dyspnea and wheezes. You perform spirometry, what is the most probable diagnosis based on the spirometry report?

- a. Interstitial lung disease
- b. Pulmonary hypertension
- c. A restrictive pattern due to obesity
- d. Normal lung mechanics
- e. Asthma

	Predicted	Actual (Meas)
FVC (L)	4.04	3.5
FEV1 (L)	3.55	2.36
FEV1/FVC	88%	67%

Answer: E

7) which of the following is false concerning the diffusion capacity of the lung? (019)

- a. CO used to measure diffusion capacity
- b. Actual diffusion time indicate time required for the O<sub>2</sub> molecule to diffuse from the alveoli through the membrane, plasma and into the RBC
- c. Doubling the area of the membrane would double the total flow of O<sub>2</sub>
- d. CO<sub>2</sub> is more diffusible than O<sub>2</sub>
- e. the lower the diffusion coefficient, the higher the total flow

Answer: E

8) which of the following is false concerning the closing volume for the lung? (019)

- a. comes between phase 3 and phase 4 on the single breath N<sub>2</sub> washout curve
- b. Marks the point where the alveoli at the apex close.
- c. Marks a sudden increase in nitrogen concentration in the expelled breath.
- d. Marks when the overinflated, poorly ventilated alveoli at the apex expel their air with high N<sub>2</sub> concentrations.
- e. Is more in COPD

Answer: B