

Where is the groove of the subclavian artery located?

- A) 2nd rib
- B) Clavicle
- C) Sternum
- D) Posterior to scalene tubercle
- E) First rib

Answer: D) Posterior to scalene tubercle

The tubercle of the rib articulates with?

- A) Body
- B) Spine
- C) Transverse process
- D) Pedicle
- E) Manubrium

Answer: C) Transverse process

The first 2–3 posterior arteries originate from?

- A) Internal thoracic artery
- B) Musculophrenic artery
- C) Highest intercostal artery
- D) Descending aorta
- E) Subclavian artery

Answer: C) Highest intercostal artery

Left intercostal veins (4–8) drain into?

- A) Right brachiocephalic vein
- B) Left superior intercostal vein
- C) Accessory hemiazygos vein

- D) Azygos vein
- E) Inferior vena cava

Answer: C) Accessory hemiazygos vein

One of the following is incorrect regarding paranasal sinuses:

- A) Sphenoidal sinus is related to pituitary gland
- B) Frontal sinus is supplied by supratrochlear nerve
- C) Maxillary sinus drains into inferior meatus
- D) Ethmoidal sinus drains into middle meatus

Answer: D) Ethmoidal sinus drains into middle meatus

A patient comes to the clinic with nose bleeding and history of hypertension. Which of the following cannot be performed?

- A) Sit down and firmly pinch the soft part of the nose for 10–15 min, not leaning backward
- B) Nasal pack soaked with adrenaline in the vestibule
- C) Cauterization of the bleeding arteries
- D) Ligation of the 3rd part of the maxillary artery
- E) Nasal spray

Answer: B) Nasal pack soaked with adrenaline in the vestibule

One of the following is incorrect:

- A) Thyroarytenoid muscle stretches vocal cords
- B) Cricothyroid muscle tenses vocal cords
- C) Posterior cricoarytenoid muscle abducts vocal cords
- D) Lateral cricoarytenoid adducts vocal cords
- E) Vocalis muscle relaxes vocal cords

Answer: A) Thyroarytenoid muscle stretches vocal cords

One of the following is correct regarding trachea:

- A) Drains axillary lymph nodes

- B) Innervated by glossopharyngeal nerve
- C) Lower end is at sternal angle
- D) Lies anterior to esophagus
- E) Contains cartilage plates posteriorly

Answer: C) Lower end is at sternal angle

Abscess that is above the horizontal fissure:

- A) Upper left
- B) Lower right
- C) Upper right
- D) Lower left
- E) Middle lobe

Answer: A) Upper left

One of the following is incorrect:

- A) Secondary bronchi supply bronchopulmonary segments
- B) Tertiary bronchi supply segments
- C) Primary bronchi supply lobes
- D) Bronchioles have cartilage
- E) Segmental bronchi supply specific segments

Answer: D) Bronchioles have cartilage

One of the following is not a drug used for sinusitis:

- A) Oseltamivir
- B) Amoxicillin
- C) Cephalosporin
- D) Trimethoprim
- E) Clarithromycin

Answer: A) Oseltamivir

One of the following is not a drug used for acute bronchitis:

- A) Amoxicillin
- B) Tetracycline
- C) Macrolides
- D) Vancomycin
- E) Amoxicillin–clavulanate

Answer: D) Vancomycin

Which drug does not cause sedation?

- A) Levocetirizine
- B) Diphenhydramine
- C) Cetirizine
- D) Loratadine
- E) Hydroxyzine

Answer: D) Loratadine

A 52-year-old man suffers from watery eyes, stuffy nose, and sneezing in spring. The doctor chooses cetirizine. The action of cetirizine is:

- A) β 2 agonist
- B) β 2 antagonist
- C) H1 agonist
- D) H1 antagonist
- E) Muscarinic antagonist

Answer: D) H1 antagonist

One of the following is a leukotriene antagonist given between asthma attacks:

- A) Montelukast
- B) Zileuton
- C) Ketotifen
- D) Cromolyn

E) Salmeterol

Answer: A) Montelukast

Severe acute asthma patients: which drug is recommended to relieve acute attacks?

A) Terbutaline

B) Ipratropium

C) Salmeterol

D) Prednisolone

E) Montelukast

Answer: A) Terbutaline

A pregnant female at 41 weeks requires labor induction. Which drug can be used?

A) Dinoprostone

B) Epoprostenol

C) Latanoprost

D) Misoprostol

E) Oxytocin

Answer: A) Dinoprostone

Antitussive drug that acts centrally and peripherally:

A) Sodium phosphate

B) Dextromethorphan

C) Narcotine

D) Benzonatate

E) Codeine

Answer: D) Benzonatate

A case reported with dry cough: the best drug to inhibit cough is:

- Dextromethorphan

B) Terpene hydrate

C) Cresote

D) Sodium citrate

E) Codeine

Answer: A) Dextromethorphan

Wrong match in histology:

A) Alveolar duct / Type I & II pneumocytes

B) Vocal cords / Keratinized stratified squamous epithelium

C) Respiratory bronchioles / Simple cuboidal ciliated with Clara cells

D) Trachea / Stratified squamous

E) Bronchus / Pseudostratified ciliated columnar

Answer: B) Vocal cords / Keratinized stratified squamous epithelium

To assess TB prevalence in a community, the most appropriate test is:

A) Mass radiographic examination

B) Direct sputum examination

C) Sputum culture examination

D) Tuberculin skin test

E) Clinical examination

Answer: D) Tuberculin skin test

The incidence of TB in Jordan in 2022:

A) 0.1

B) 4.7

C) 3.8

D) 5

E) 6.8

Answer: C) 3.8

One of the following is incorrect regarding non-atopic asthma:

- A) More common in men than women
- B) Negative skin test
- C) Serum IgE is normal
- D) Often triggered by viral infections
- E) Associated with allergic rhinitis

Answer: E) Associated with allergic rhinitis

All of the following organisms cause atypical pneumonia, except:

- A) *Mycoplasma pneumoniae*
- B) *Legionella*
- C) *Coxiella burnetii*
- D) *Staphylococcus aureus*
- E) *Chlamydia pneumoniae*

Answer: D) *Staphylococcus aureus*

One of the following is correct:

- A) Patchy infiltrate is the main characteristic of bronchopneumonia
- B) Bronchopneumonia affects the whole lung
- C) Pneumothorax is typical

Answer: A) Patchy infiltrate is the main characteristic of bronchopneumonia

Honeycomb appearance is seen in:

- A) Congenital cyst of the lung
- B) Abnormal lung number
- C) Congenital collapse of the lung
- D) Pulmonary fibrosis
- E) Pulmonary edema

Answer: A) Congenital cyst of the lung

All of the following give rise to the diaphragm, except:

- A) Dorsal aorta
- B) Septum transversum
- C) Body wall
- D) Esophageal endoderm
- E) Pleuroperitoneal membrane

Answer: D) Esophageal endoderm

Regarding the structure of heme in myoglobin and hemoglobin, all of the following statements are correct except:

- A) Heme has a similar structure in myoglobin and hemoglobin.
- B) Heme is a complex of porphyrin and ferric iron (Fe^{3+}).
- C) Porphyrins are a group of organic compounds that have four pyrrole subunits interconnected via alpha-meth-ylene bridges ($=\text{CH}-$).
- D) A pyrrole ring is a group of four carbon atoms and a nitrogen atom bound together in a ring.
- E) Heme binds oxygen through its central iron atom.

Answer: B) Heme is a complex of porphyrin and ferric iron (Fe^{3+}).

The carboxyl groups of 2,3-diphosphoglycerate (DPG) interact with which amino acid residues in hemoglobin?

- A) Lysine 82
- B) Histidine 142
- C) Lysine 2
- D) Histidine 82
- E) Arginine 141

Answer: A) Lysine 82

The basic rhythm of respiration is generated by neurons in the medulla. Which of the following limits the duration of inspiration and increases the respiratory rate?

- A) Apneustic center
- B) Dorsal respiratory group
- C) Nucleus of the tractus solitarius

- D) Pneumotaxic center
- E) Ventral respiratory group

Answer: D) Pneumotaxic center

The afferent (sensory) endings for the Hering-Breuer reflex are mechanoreceptors located in:

- A) Carotid arteries
- B) Alveoli
- C) External intercostal muscles
- D) Bronchi and bronchioles
- E) Diaphragm

Answer: D) Bronchi and bronchioles

A 2-year-old child presents with sudden abdominal pain, vomiting, and passage of red currant jelly stool. Ultrasound confirms intussusception. Which of the following organisms is most commonly associated with this condition?

- A) Adenovirus
- B) Rotavirus
- C) Salmonella
- D) Shigella
- E) Escherichia coli

Answer: A) Adenovirus

Which of the following diseases is caused by the addition of 2 base pairs at codon 121?

- A) Cystic fibrosis
- B) Immotile cilia syndrome
- C) Anemia
- D) Hereditary respiratory distress syndrome (RDS)
- E) Sickle cell disease

Answer: D) Hereditary respiratory distress syndrome (RDS)

A 5-year-old child presents with fever, cough, and signs of respiratory distress. Laboratory culture of a throat swab is performed on IsoVitalex-enriched chocolate agar, which supports the growth of fastidious organisms. Which of the following bacteria is most likely to grow on this medium?

- A) *Streptococcus pyogenes*
- B) *Haemophilus influenzae*
- C) *Neisseria meningitidis*
- D) *Staphylococcus aureus*
- E) *Escherichia coli*

Answer: B) *Haemophilus influenzae*

Which of the following statements regarding *Legionella* is correct?

- A) Lung transplant recipients are especially susceptible.
- B) Urine antigen test is the gold standard for diagnosis.
- C) Legionnaire's disease and Pontiac fever are the same condition.
- D) *Legionella* is a gram-positive bacterium.
- E) *Legionella* infection is always mild and self-limiting.

Answer: B) Urine antigen test is the gold standard for diagnosis.

A 3-year-old child presents with a barking cough, stridor, and hoarseness, worse at night. The symptoms suggest croup. Which of the following viruses is the most common cause?

- A) Rhinovirus
- B) Adenovirus
- C) Parainfluenza
- D) Influenza A
- E) Respiratory syncytial virus (RSV)

Answer: C) Parainfluenza

A 40-year-old farmer presents with a painless black eschar on his hand, fever, and malaise. He reports handling animal hides recently. Laboratory tests confirm a gram-positive rod. This bacterium is also considered a potential biological weapon. Which of the following bacteria is the most likely cause?

- A) *Bacillus anthracis*
- B) *Clostridium tetani*

- C) *Listeria monocytogenes*
- D) *Yersinia pestis*
- E) *Francisella tularensis*

Answer: A) *Bacillus anthracis*

A 68-year-old man presents with fever, productive cough, and confusion. Laboratory tests reveal hyponatremia. Chest X-ray shows a patchy infiltrate in the right lower lobe. The patient recently returned from a hotel stay with exposure to a hot tub. Which of the following organisms is the most likely cause?

- A) *Streptococcus pneumoniae*
- B) *Legionella pneumophila*
- C) *Mycoplasma pneumoniae*
- D) *Haemophilus influenzae*
- E) *Klebsiella pneumoniae*

Answer: B) *Legionella pneumophila*

Which of the following statements regarding lung physiology is incorrect?

- A) Zone 1, 2, and 3 are normally present in a healthy individual.
- B) Functional residual capacity depends on the balance between lung elastic recoil and chest wall expansion.
- C) Oxygen diffuses from alveoli to blood due to partial pressure gradients.
- D) Pulmonary surfactant reduces alveolar surface tension.
- E) Alveolar ventilation increases with tidal volume.

Answer: A) Zone 1, 2, and 3 are normally present in a healthy individual.

All of the following statements regarding functional residual capacity (FRC) are true, except:

- A) FRC is the volume of air remaining in the lungs after normal expiration.
- B) FRC increases with age due to decreased lung elasticity.
- C) FRC is determined by the balance between lung elastic recoil and chest wall expansion.
- D) FRC increases with decreased lung elasticity.
- E) FRC is important for maintaining constant gas exchange between breaths.

Answer: A) FRC increases with elasticity.

In a healthy individual with no ventilation-perfusion mismatch, which of the following statements is correct?

- A) Anatomical dead space is greater than physiological dead space
- B) Physiological dead space is greater than anatomical dead space
- C) Anatomical dead space = physiological dead space
- D) Both dead spaces are negligible
- E) Dead spaces vary with tidal volume

Answer: C) Anatomical dead space = physiological dead space

Which of the following statements about antioxidant enzymes is incorrect?

- A) Superoxide dismutase is called the primary defense against oxidative stress.
- B) Glutathione peroxidase reduces hydrogen peroxide to nontoxic alcohols.
- C) Hydrogen peroxide is highly reactive but has limited lipid solubility.
- D) Catalase is found in peroxisomes and cytosol.
- E) GSSG is reduced to glutathione by glutathione reductase.

Answer: A) Superoxide dismutase is called the primary defense against oxidative stress.

Which of the following statements is correct?

- A) The distal histidine of myoglobin and hemoglobin is sterically repelled by the heme porphyrin ring.
- B) Cytochrome b5 reduces the ferric iron of methemoglobin.
- C) Oxyhemoglobin and deoxyhemoglobin have the same affinity for protons (H^+).
- D) Buffer effectiveness does not depend on their concentration.
- E) Maintenance of blood pH relies solely on the bicarbonate buffering system.

Answer: B) Cytochrome b5 reduces the ferric iron of methemoglobin.

Which of the following statements about buffers is true?

- A) pH higher than pKa means the buffer is more effective.
- B) pH lower than pKa means the buffer is more effective.
- C) In blood plasma, acid and base concentrations are always equal.

D) pH close to pKa means the buffer is more effective.

E) Buffers are more effective when pH is far from pKa.

Answer: D) pH close to pKa means the buffer is more effective.

A 65-year-old patient with a history of diabetes presents with a chronic wound infection on his foot. On examination, the wound has a blue-green discoloration, and a culture grows a gram-negative rod that produces a grape-like odor, forms beta-hemolytic colonies on blood agar, is oxidase-positive, and can grow at 42°C. The organism is also resistant to many antibiotics. Which of the following statements about this organism is incorrect?

A) It is non-hemolytic on blood agar.

B) It can grow at 42°C.

C) It is resistant to many antibiotics.

D) It is a gram-negative rod.

E) It produces a characteristic grape-like odor.

Answer: A) It is non-hemolytic on blood agar.

Which of the following cells are typically seen on H&E stains in bronchial asthma?

A) Eosinophils

B) Neutrophils

C) Macrophages

D) Basophils

E) Lymphocytes

Answer: A) Eosinophils

To increase alveolar ventilation, which of the following should be increased?

A) Tidal volume

B) Respiratory rate

C) Both tidal volume and respiratory rate

D) Dead space

E) Expiratory time

Answer: C) Both tidal volume and respiratory rate

Which of the following is not related to pulmonary fibrosis?

- A) Restrictive lung disease
- B) Obstructive lung disease
- C) Oxygen therapy is very good
- D) High A-a gradient
- E) Reduced lung compliance

Answer: C) Oxygen therapy is very good

Which of the following statements about idiopathic pulmonary fibrosis (IPF) is incorrect?

- A) Usual interstitial pneumonia (UIP) is the characteristic pattern on histology and radiology.
- B) Fibrosis predominantly affects the upper lobes.
- C) It commonly occurs in elderly males.
- D) The only definitive treatment is lung transplantation.
- E) It is a chronic, progressive interstitial lung disease.

Answer: B) Fibrosis predominantly affects the upper lobes.

Which of the following aminoglycosides is the most effective in the treatment of tuberculosis?

- A) Streptomycin
- B) Amikacin
- C) Kanamycin
- D) Gentamicin
- E) Tobramycin

Answer: A) Streptomycin

What is the aim of hyperventilating for 10 minutes before running?

- A) Respiratory acidosis
- B) Respiratory alkalosis
- C) Metabolic acidosis
- D) Metabolic alkalosis

E) Maintain acid-base balance

Answer: B) Respiratory alkalosis

Which of the following statements about *Corynebacterium diphtheriae* is false?

- A) All strains produce a powerful exotoxin.
- B) The disease is highly contagious.
- C) It is a gram-positive rod.
- D) Infection can cause pseudomembrane formation in the throat.
- E) Vaccination with DTaP can prevent the disease.

Answer: A) All strains produce a powerful exotoxin.

A 45-year-old patient presents with a history of recurrent sinus infections. A sample from the nasopharynx is cultured, and the colonies appear grayish-white. When pushed with a loop, the colonies “scoot” across the agar without disruption. Which of the following bacteria is the most likely cause?

- A) *Neisseria meningitidis*
- B) *Moraxella catarrhalis*
- C) *Streptococcus pneumoniae*
- D) *Haemophilus influenzae*
- E) *Staphylococcus aureus*

Answer: B) *Moraxella catarrhalis*

Which of the following statements about *Streptococcus pneumoniae* is incorrect?

- A) It is gram-positive and optochin-sensitive.
- B) PPSV23 protects against 23 strains and is recommended for people ≥ 2 years.
- C) PCV13 protects against 13 strains and is recommended for children < 2 years.
- D) Patients with asplenia are protected against this bacteria.
- E) It is a major cause of pneumonia and meningitis.

Answer: D) Patients with asplenia are protected against this bacteria.

What are the stages of lobar pneumonia in order?

- A) Congestion → Red hepatization → Grey hepatization → Resolution → Fibrosis
- B) Congestion → Grey hepatization → Red hepatization → Resolution → Fibrosis
- C) Congestion → Red hepatization → Grey hepatization → Resolution → Normal
- D) Red hepatization → Congestion → Grey hepatization → Resolution → Normal
- E) Congestion → Red hepatization → Resolution → Grey hepatization → Normal

Answer: C) Congestion → Red hepatization → Grey hepatization → Resolution → Normal

Which one of the following statements is WRONG?

- A) Oseltamivir is used with macrolides in the treatment of bacterial sinusitis.
- B) Macrolides can be used in the treatment of atypical pneumonia.
- C) Amoxicillin-clavulanate is a first-line therapy for acute bacterial sinusitis.
- D) Oseltamivir is an antiviral drug used for influenza.
- E) Doxycycline can be used as an alternative in penicillin-allergic patients with sinusitis.

Answer: A) Oseltamivir is used with macrolides in the treatment of bacterial sinusitis.

Which type of emphysema is most strongly associated with smoking?

- A) Centriacinar emphysema
- B) Panacinar emphysema
- C) Paraseptal emphysema
- D) Irregular emphysema
- E) Mixed type emphysema

Answer: A) Centriacinar emphysema

The horizontal fissure at the level of the 4th costal cartilage separates which lobes of the right lung?

- A) Upper lobe from the middle lobe
- B) Upper lobe from the lower lobe
- C) Middle lobe from the lower lobe
- D) Upper lobe from the hilum
- E) Middle lobe from the cardiac notch

Answer: A) Upper lobe from the middle lobe

Which of the following is a medically important human dimorphic pathogen?

- A) *Histoplasma capsulatum*
- B) *Aspergillus niger*
- C) *Aspergillus flavus*
- D) *Coccidioides immitis*
- E) *Blastomyces dermatitidis*

Answer: A) *Histoplasma capsulatum*

One of the following is incorrect?

- A) Peroxidase oxidise H_2O_2 to $2H_2O$
- B) Peroxidase convert $2GSH$ into $GSSH$
- C) Reductas convert $GSSH$ into GSH

Answer: A) Peroxidase oxidise H_2O_2 to $2H_2O$

Which biochemical test is used to distinguish *Haemophilus influenzae* from other *Haemophilus* spp. based on the requirement of X-factor and V-factor?

- A) Catalase test
- B) Oxidase test
- C) Urease test
- D) Satellitism test
- E) Coagulase test

Answer: D) Satellitism test

The Satellitism test helps identify *Haemophilus influenzae* because this organism requires which of the following growth factors?

- A) Only X-factor
- B) Only V-factor
- C) Both X-factor and V-factor
- D) Neither X-factor nor V-factor

E) Vitamin K

Answer: C) Both X-factor and V-factor

A 35-year-old woman presents with persistent dry cough, shortness of breath, and bilateral hilar lymphadenopathy seen on chest X-ray. Biopsy of lymph nodes reveals non-necrotizing epithelioid granulomas, with the presence of Schaumann bodies and asteroid bodies within giant cells. What is the most likely diagnosis?

A) Tuberculosis

B) Sarcoidosis

C) Histoplasmosis

D) Wegener's granulomatosis

E) Silicosis

Answer: B) Sarcoidosis