

1) The oxygen dissociation curve of normal adult hemoglobin is most effectively shifted to the right by:

- a. Mixing with fetal hemoglobin
- b. Increased 2,3-bisphosphoglycerate (BPG) ✓
- c. Cooperative binding of oxygen
- d. Increased PH
- e. Decreased CO₂

2) Methemoglobin is converted to functional hemoglobin by the enzyme:

- a. Dismutase
- b. Reductase ✓
- c. Oxidase
- d. Catalase
- e. Peroxidase

3) The principle buffer in erythrocyte is:

- a. Bicarbonate
- b. Oxyhemoglobin
- c. Acetate
- d. Phosphate
- e. Deoxyhemoglobin ✓

4) The allosteric site of CO₂ on hemoglobin is positioned on:

- a. Space between 2 beta chains ✓
- b. Distal histidine
- c. Lysine and histidine in alpha chains
- d. Histidine 146 of beta chains
- e. Heme iron

5) All following substances are considered cellular antioxidant except:

- a. Glutathione
- b. Urea ✓
- c. Uric acid
- d. Vit E.
- e. Vit C.

6) 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

7) Suppose the O₂ binding curve for hemoglobin becomes hyperbolic instead of sigmoidal , which of the following hemoglobin properties will be more seriously affected by this change?

- a. Affinity of O₂ binding in the lung
- b. Affinity of CO₂ binding in the tissue
- c. Affinity of H⁺ binding in the tissue
- d. Oxygen delivery from Hb to myoglobin in muscles ✓
- e. Affinity of 2,3-bisphosphoglycerate binding in the tissues

8)The thyrohyoid membrane is pierced by the:

- a. Vagus nerve and superior thyroid artery
- b. Recurrent laryngeal nerve and inferior thyroid artery
- c. superior laryngeal nerve and superior laryngeal artery
- d. External branch of superior laryngeal nerve and superior laryngeal artery
- e. Internal branch of superior laryngeal nerve and superior laryngeal artery ✓

9) The inferior meatus of the nose contains the opening of the :

- a. Anterior ethmoidal air sinus
- b. Nasolacrimal canal ✓
- c. posterior ethmoidal air sinus
- d. maxillary sinus
- e. Frontal sinus

10) If an infection of the pharynx has spread to the auditory (Eustachian) tube, to which of these structures would the infection be most likely to spread next?

- a. Auditory nerve
- b. Inner ear
- c. Middle ear ✓
- d. Mastoid air cells
- e. External auditory canal

11) 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 ✓

12) The mucous membrane of the larynx below th level of the vocal cord is supplied by ?

- A- External branch of the superior pharyngeal nerve
- B- Hypoglossal nerve
- C- Internal branch of the superior laryngeal nerve
- D- Lingyal nerve
- E- recurrent laryngeal nerve ✓

13) the constrictor muscle of the larynx receive their motor nerve supply from ?

- A- glossopharyngeal nerve
- B- Hypoglossal nerve
- C- Spinal accessory nerve ✓
- D- sympathetic trunk
- E- Vagus nerve

14) All of the following concerning the lung is correct EXCEPT ?

- A- Inhaled foreign bodies most frequently enter the right lung
- B- the left lung is in direct contact with the arch of the aorta and the descending aorta
- C- there are no lymph nodes within the lung ✓
- D- the structures of the lung receives its blood supply from the bronchial arteries
- E- the costodiaphragmatic recesses are lined with parietal pleura

15) Which is the correct order, from superficial to deep, of the following five structures?

- (a) parietal pleura
- (b) visceral pleura
- (c) pleural cavity
- (d) Lung
- (e) wall of thoracic Cavity

Ans: e > a > c > b > d

16) During a lung transplant procedure , an observing 4th year medical student attempted to pass his index finger posteriorly inferior to the root of the left lung . but he found passage of the finger blocked , which structure would most likely be responsible for this.?

- a. Costodiaphragmatic recess
- b. Cervical pleura
- c. Inferior vena cava
- d. Left pulmonary vein
- e. Pulmonary ligament ✓

17) A premature baby usually has difficulty breathing , However the respiratory system developed enough for survival by :

- a. 17 weeks
- b. 24 weeks
- c. 28 week ✓
- d. 36 weeks
- e. none of the above

18) 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

19) All intrinsic muscles of the larynx are supplied by the recurrent laryngeal nerve except the:

- a. interarytenoid muscle
- b. Posterior cricoarytenoid muscle
- c. Thyroarytenoid muscle
- d. Cricothyroid muscle ✓
- e. Lateral Cricoarytenoid

Q20. In the chloride shift , chloride ions exchange place with :

- a .Bicarbonate ion ✓
- b . Sodium ions
- c . Potassium ions
- d . hydrogen ions
- e . Hemoglobin

Q21. The Primary force responsible for air moving into the lungs during inhalation is :

- a . Atmospheric pressure
- b . Muscular spasm
- c. reduced surface tension inside the lung
- d.pressure difference atmospheric-intrapulmonary ✓
- e . Muscular relaxation

Q22 . Even after forceful exhalation, a certain volume of air remains in the lung. This volume is called _____

- a . Tidal volume
- b. Expiratory reserve volume
- c . Vital capacity
- d. Residual volume ✓
- e . Expiratory reserve volume

Q23. The basic rhythm of breathing is controlled by which portion of the brain ?

- a . Peripheral chemoreceptor
- b . Dorsal respiratory group of the medullary rhythmicity center
- c.Ventral respiratory grou of the medullary rhythmicity center ✓
- d . Pneumotaxic area in Pons
- e . Apneustic area in midbrain

Q24. Stimuli or conditions that would tend to increase ventilation include :

- a . Lower than normal blood P CO₂
- b . Higher than normal blood PH
- c. Breathing carbon monoxide
- d. Iron- deficiency anemia
- e . Breathing air with reduced P O₂ ✓

Q25. 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 ✓
- c . Cannot be voluntary controlled .

Q26. Intraplural pressure :

- a . Is less than atmospheric pressure ONLY during inspiration
- b . Becomes equal to the external environmental air pressure by the action of respiratory muscle
- c. Is the difference between the pressure in the plural cavity and that within the lung alveoli ?
- d . Is always less than atmospheric pressure ✓
- e . Increase when the diaphragm and external intercostal muscle contract

Q27. Physiology define the term " Pulmonary ventilation" as :

- a . Breathing due to movement of ribs
- b . The expansion of the alveoli due to pressure difference
- c. The movement of the atmospheric air to the lung
- d. Breathing using the diaphragm only
- e . Gas exchange between the atmosphere and lung alveoli ✓

Q28. In the adult human, total lung capacity (TLC) is approximately :

- a . Equals to 15 liters
- b. Equals to 9 liters
- c . Equals to 11 liters
- d . Equals to 2 liters
- e. Equals to 6 liters ✓

Q29. Vital capacity is :

- a . The sum of all lung volumes ?
- b. Sum of tidal volume plus residual volume
- c. The inspiratory reserve plus expiratory reserve volume
- d . The sum of inspiratory reserve volume, tidal volume, and expiratory reserve volume ✓
- e . The sum Inspiratory capacity to expiratory capacity

Q30. Which of the following contains the highest percentage of carbon dioxide ?

- a . Alveolar air
- b. Pulmonary arterie ✓
- c. Pulmonary veins
- d. Intercellular (interstitial) fluid
- e . Systemic arteries

31) 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

32) End of quiet respiration , muscle relaxed and lungs contents are at

- a. Residual volume (RV)
- b. Expiratory reserve volume (ERV)
- c. Functional residual capacity (FRC) ✓
- d. Inspiratory reserve volume (IRV)
- e. Total lung capacity (TLC)

33) Which of these structures is not a part of the lower respiratory tract ?

- a. Bronchii
- b. Larynx
- c. Alveoli
- d. pharynx ✓
- e. trachea

34) Surfactant :

- a. Increase pleural pressure
- b. Reduces surface tension of the fluid lining the alveoli ✓
- c. Decrease alveolar pressure
- d. Makes inspiration more difficult
- e. Can cause a pneumothorax

35) Hypoxic hypoxia mainly attributed to :

- a. Respiratory membrane thickness
- b. Increased distance between alveolar and capillary distance
- c. Decrease partial pressure of O_2 in atmosphere ✓
- d. Increase red blood cells in pulmonary arterioles
- e. Increase PO_2 in inspired air

36) Total oxygen carrying capacity of blood during exercise equals :

- a. 100 ml/min
- b. 250 ml/min
- c. 200 ml/min
- d. 1000 ml/min
- e. None of the above

37) Increased Reid index is a feature of which of the following

- a. Bronchiectasis
- b. Chronic bronchitis ✓
- c. Emphysema
- d. Bronchial asthma
- e. Bronchopneumonia

38) Which of the following is a characteristic feature of adult respiratory distress syndrome ?

- a. Interstitial tissue inflammation
- b. Alveolar septal fibrosis
- c. Alveolar exudates
- d. alveolar damage ✓
- e. Granuloma formation

39) Atypical pneumonia can be caused by the following agents except :

- a. Mycoplasma pneumonia
- b. Coxiella pneumonia
- c. Klebsiella pneumonia ✓
- d. Influenza virus
- e. Chlamydia pneumonia

40) In Primary tuberculosis , all of the following may be seen except:

- a. Caseation
- b. Calcification
- c. Epithelioid granuloma
- d. Cavitation ✓
- e. Longhan's giant cells

41) Neuroendocrine lesions of the lungs are:

- a) Broncholo-alveolar carcinoma ✓
- b) Carcinoid tumor.
- c) Hamartoma.
- d) Squamous cell carcinoma
- e) None of the above

42) True about Ghon focus :

- a) Left apical parenchymal lesion.
- b) Right apical parenchymal lesion.
- c) Subpleural caseous lesion ✓.
- D) Caseous hilar lymphadenitis .
- e) Right apical pleural nodule .

43) Most dangerous particles causing pneumoconiosis are of size :

- a) 1-5 microns ✓ .
- b) Less than 1 micron.
- c) 5-10 microns .
- d) 10-20 microns .
- e) 30 microns .

44) A 35 years old female presented with cough & dyspnea .Chest X ray revealed enlarged lymph nodes .A lymph node biopsy taken ,microscopically showed a non-caseating granulomas .Special stains for tuberculosis & fungi were negative ,what the most like diagnosis ?



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- a) Asthma.
- b) Typical pneumonia.
- c) Sarcoidosis ✓
- d) All of the above.
- e) None of the above.

45) Features of Goodpasture syndrome include :

- a) Diffuse alveolar hemorrhage.
- b) Antibasement membrane antibody direct against collagen type IV.
- c) Hemoptysis .
- d) Progressive glomerulonephritis .
- e) All of the above ✓ .

46) A 50 years old man presented with pain and sensory abnormalities of the medial side of the left upper arm ,with ipsilateral enophthalmos ,ptosis, anhydrosis& meiosis at the left side of the face .What is the best interpretation of this information ?

- a) Apneurotic tumor of left lung ✓
- b) Paraneoplastic syndrome.
- c) Mediastinal tumor .
- d) Metastatic carcinoma.
- e) None of the above.

47. Continuous administration of which of the following agents is a must to have a full therapeutic effect ?

- a. Tiotropium
- b. Sulbutamol
- c. Theophylline
- d. Inhaled Flunisolide (Answer)
- e. Oxymetazoline

48. Which of the following statement is correct ?

- a. All COPD guidelines recommend inhaled corticosteroids as first line therapy .
- b. For long-term control of asthma, daily use of salbutamol is not recommended . (Answer)
- c. Salmeterol has strong anti-inflammatory effect .
- d. Short acting beta 2 agonist can be used alone to manage patient with chronic asthma .

49. Which of the following has the narrowest therapeutic index

- a. Tiotropium
- b. Salmeterol
- c. Sulbutamole
- d. Inhaled Flunisolide
- e. Theophylline (Answer)

50. Rinsing the mouth with water after steroid inhalation can minimize the potential for which of the following side effect?

- a. Growth retardation
- b. Adrenal suppression
- c. Osteoporosis
- d. Behavior disturbances
- e. Oropharyngeal candidiasis (Answer)



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51. A man was diagnosed with community acquired pneumonia .Ahmad is 2 years old and does not to day care. As an empirical treatment, Which of the following drugs should be prescribed to him ?

- a. Azithromycine
- b. Levofloxacin
- c. Amoxicilline-clavullanic acid (Answer)
- d. Penicilline V
- e. Ceftriaxone

52. First generation cephalosporin can be used empirically in treating which of the following bacterial infection?

- a. Typical Community-acquired pneumonia
- b. Acute bacterial Pharyngitis (Answer)
- c. Acute bacterial Rhinosinusitis
- d. Acute Otitis media
- e. Atypical Community-acquired pneumonia

53. Observation option is a medical practice that is a part of the management of which of the following bacterial infection ?

- a. Typical Community-acquired pneumonia
- b. Pharyngitis
- c. Rhinosinusitis
- d. Acute Otitis Media(Answer)
- e. Atypical Community-acquired pneumonia

54 . First generation cephalosporin can be used empirically in treating which of the following bacterial infection ?

- a. Typical Community-acquired pneumonia
- b. Acute bacterial Pharyngitis (Answer)
- c. Acute bacterial Rhinosinusitis
- d. Acute Otitis media
- e. Atypical Community-acquired pneumonia

55) Which of the following agents known as anti-inflammatory as well as bronchodilation activity ?

- a. Cromolyn .
- b. Sulbutamol.
- c. Tiotropium.
- d. Omalizunab .
- e. Theophylline ✓

56) in the progression of pertussis (whooping cough), the following sequence of phases is observed :

- a. Primary , reactivation, extra pulmonary .
- b. Primary , secondary , tertiary .
- c. Catarrhal , Paroxysmal, Convalesce ✓
- d. Adhesion , Progression , dyspnea.
- e. None of the above .

57) the entire following are correct for case - management algorithms , except :

a. It helped to reduce the occurrence of acute lower respiratory tract infections (ALRTs) ✓.

b. It helped to reduce the Number of deaths due to acute lower respiratory tract infections (ALRTs).

c. It is developed to train providers at primary care to better manage ALRTs in children .

d. It helps to diagnose ALRTs cases that require antibiotic treatment and referral for hospital.

e. It trains providers to look at respiratory rate .

58) Croup is a clinical state occurs in which of the following infection:

- a. Diphtheria .
- b. Whooping Cough .
- c. Respiratory Syncytial Virus.
- d. Haemophilus Influnza tybe b .
- e. A and B ✓.

59) A 23- year old asthmatic patient started to have severe chest pain and a productive cough 48 hours after admission to the hospital due to severe asthmatic attack . The patient was taking Ventolin Nebulizer as part of treatment . Chest X-ray revealed Pneumonia . which on of the following is the most probable causative organism :

- a. Pseudomonus aeruginosa .
- b. haemophilus Influenza.
- c. Mycoplasma Pneumoni ✓.
- d. Strep . Pneumonia.
- e. Staph .Aureus .

60) A 7- year old presented to the pediatrician because his mother noticed smoky color to his urine . On questioning the mother , it is revealed that the child had a sore throat several weeks ago that was left untreated . physical examination reveals hypertension and mild generalized edema .Urinalysis shows significant RBCs . Which of the following accurately describe the microorganism responsible for the child illness ?

- a. alpha - hemolysis on blood agar .
- b. catalase positive.
- c. coagulase positive .
- d. sensitive to bacterica ✓
- e. sensitive to optochin

61) First generation cephalosporins can be used empirically in treating which of the following bacterial infections?

- a. Typical community -acquired pneumonia .
- b. Acute bacterial pharyngitis ✓.
- c. Acute bacterial Rhinosinusitis .
- d. Acute Otitis Media .
- e. A Typical community -acquired pneumonia .

62) Observation option is a medical practice that is part of management which of the following bacterial infections??

- a. Typical community -acquired pneumonia .
- b. pharyngitis.
- c. Rhinosinusitis .
- d. Acute Otitis Media ✓.
- e. A Typical community -acquired pneumonia.

:63) In Paragonimus Westermani, all of the following are true, except

- a) The unembryonated egg is the diagnostic stage
- b) ELISA test is highly sensitive as a diagnostic tool.
- c) Ingestion of raw crustaceans is highly associated with Paragonimiasis.
- d) The parasite exists as metacercariae in the First intermediate host (crustaceans) ✓
- e) Parziquantil is the treatment of choice.

64) All of the following are true regarding Middle East Respiratory Syndrome (MERS) , except

- a) It is caused by a modified virus of the Coronaviridae family.
- b) It IS spread mainly through aerosols containing the virus.
- c) The virus is a reassortant of an animal and a human virus ✓
- d) It is characterized by rapidly progressive atypical pneumonia like syndrome.
- e) There is no specific antiviral treatment or vaccine available.

65) All of the following are TRUE about vaccination for respiratory tract pathogens, except:

- a) the 23-valent Pneumococcal polysaccharide vaccine (PPV) is a conjugated T-cell independent vaccine that can be given for infants aged 2 months.
- b) DTaP is an inactivated vaccine that is not contraindicated in immunosuppressed infants ✓.
- c) Adenovirus vaccine contains live attenuated Adenovirus types 4 and 7 and it is given exclusively for new military recruits
- d) PRP-protein conjugated vaccine is conjugated to Diphtheria toxoid and can confer immunity against H influenza type b to infants if given as early as 2 months of age.
- e) There is no available vaccine for Rhinovirus because of multiple serotypes (more than 100 serotypes)

66) A 24 year-old woman has fever, malaise and a dry nonproductive cough. She also complains of headache, muscle aches and leg pain . laboratory values were significant for elevated cold agglutinins what is the treatment of choice for this patient ?

- a) Amoxicillin.
- b) Cephalexin.
- c) Clarithromycin ✓.
- d) trimethoprim/sulfamethoxazole.
- e) Supportive treatment.

67) Regarding viruses causing upper respiratory tract infection, all of the following are true, except :

- a) the optimal time for flu vaccination is during August, September and October.
- b) RSV virus possesses 2 glycoproteins: F protein for Fusion and G protein for attachment.

- c) Flu shots are most widely used prophylactically against Influenza virus.
- d) Integration of Adenoviral DNA into the host cell genome could occur and it has been linked with carcinogenic effect in animals.
- e) MERS-CoV has a strong tropism for ciliated bronchial epithelial cells ✓.

68) All of the following are useful in diagnosing TB infection, except:

- a) Gram stain and antibiotic sensitivity ✓
- b) Culture on Lowenstein-Jensen medium.
- c) Tuberculin test (PP D).
- d) staining of sputum sample with Ziehl-Neelsen
- e) Growth of sputum sample in Middlebrooks 7H9 liquid media

69) A 7-month-old child presents with a 4-day history of fever, Deeping cough and dyspnea. A chest x-ray film shows multiple interstitial infiltrates and hyperinflation of the Lungs .Multinucleated giant cells with cytoplasmic inclusion bodies are seen when a nasal n ash is inoculated into culture. The most appropriate therapy includes administration of which of the following drugs ?

- a) Acyclovir.
- b) Gancyclovir.
- c) Ribavirin ✓.
- d) Trifluorhymidine
- e) Amantadine.

70) A mother brings her 3-year-old boy into the emergency department because he has developed shortness of breath and a harsh, "breaking cough "with hoarseness. The virus responsible for this child's illness belongs to which of the following families?

- a) Papovirus.
- b) Orthomyxovirus.
- c) Paramyxovirus ✓.
- d) Picomavirus
- e) Poxvirus

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