

RESPIRATORY SYSTEM

MIDTERM EXAM
WAREED BATCH

إعداد :



1) The cartilages of the larynx are developed from?

- a. Endoderm of the 4th and 6th pharyngeal arches
- b. Mesoderm of the 4th and 6th pharyngeal pouches
- c. Mesoderm of the 4th and 6th pharyngeal arches**
- d. Ectoderm of the 4th and 6th pharyngeal arches
- e. Endoderm of the 4th and 6th pharyngeal pouches

2) Which of the following findings suggests viral infection of the lung?

- a. Alveolar hemorrhage.
- b. Fibrin deposition.
- c. Neutrophilic aggregation.
- d. Nuclear inclusions.**
- e. Type II pneumocyte hyperplasia.

3) The most common causative organism for bronchopneumonia?

- a. Haemophilus Influenza.
- b. Streptococcus pneumonia.**
- c. Moraxella Catarrhalis.
- d. Legionella pneumonia.
- e. Klebsiella pneumonia.

4) Hereditary RDS due to SP-B deficiency, choose the wrong statement?

- a. SP-B protein is encoded by a single gene on human chromosome 2.
- b. Hereditary SP-B deficiency is an autosomal recessive disorder
- c. The common SP-B mutation is a net 2 base pair (bp) insertion into codon 121
- d. Infants with hereditary SP-B deficiency develop progressive respiratory failure that dose not respond to all treatment and death
- e. The mutation causes complete absence of proSP-B but the presence of matureSP-B**

5) The Alveolar - arterial oxygen (A—a P02) gradient?

- a. Is normally about 5 kPa (39.5 mmHg) in a young person
- b. Is increased by hypoventilation
- c. is usually increased by either right-to-left shunts or ventilation-perfusion mismatching.**
- d. Oxygen therapy can significantly improve oxygen saturation of the blood emerging from regions with a low ventilation-perfusion ratio
- e. Is within normal range in case of pulmonary infarction

6) One of the following matched pairs is NOT TRUE?

- a. External intercostals and diaphragm- Quiet Inspiration
- b. Intrapleural pressure minus 7mmHg- Forced inspiration
- c. Sternocloidmastoid and scalenes- Quiet Expiration**
- d. Abdominal Muscles' Forced Expiration
- e. Intrapleural pressure minus 3mmHg- Forced Expiration

7) Each of the following statements concerning diagnosis, prevention and treatment of influenza is correct EXCEPT?

- a. QUICKVUE Influenza Test is a rapid test based on detection of viral neuraminidase
- b. Amantadine block the M2 ion channel, thereby inhibiting uncoating
- c. The influenza vaccine is a trivalent vaccine
- d. Zanamivir is a member of a class of drugs called neuraminidase inhibitors
- e. The main antigen in the vaccine that induces protective antibody is the hemagglutinin

8) Regarding ventilation / perfusion (V/Q) relationships, which statement is INCORRECT?

- a. V/Q ratio is greatest at the lung apex
- b. V/Q ratio is about one at level of third rib when upright
- c. Ventilation decreases proportionately more than perfusion from base to apex
- d. V/Q ratio for whole lung at rest is about 0.8
- e. Exercise increases the V/Q ratio

9) Regarding SARS-CoV-2 and COVID-19 infection, all are true EXCEPT?

- a. SARS-CoV—Z bind to angiotensin-converting enzyme 2
- b. Bat might be the original host for SARS-CoV—Z
- c. SARS-CoV—Z S1 subunit of the spike protein is responsible for the fusion of the viral envelop with the host cell membrane
- d. Coronaviruses have single-stranded, positive-polarity RNA genome
- e. Symptoms of COVID-19 may appear as quickly as 2 days or as long as 14 days after exposure

10) Cricothyroid muscle is supplied by the :

- a. Superior laryngeal nerve
- b. Pharyngeal nerve
- c. Recurrent laryngeal nerve
- d. External laryngeal nerve
- e. Internal laryngeal nerve

11) Regarding the advantages of DOTS in treatment of T B patients, one statement is not true?

- a. Low cost.
- b. Reduction of emerging drug resistant strains
- c. Rapid cure of the TB patients
- d. Low failure rate.
- e. Improved patient's compliance

12) All following about treatment of cough are TRUE EXCEPT?

- a. Codeine is low efficacy opioids
- b. Methadone has long duration of action
- c. Dextromethorphan is included as antitussive in OTC cough preparations
- d. Opioid antitussives can be used in children under 6 years
- e. Opioids side effect: respiratory depression

13) Which of the following is NOT describing the pulmonary circulation?

- a. If you reduce the capillaries pressure below the alveolar pressure; the capillaries would be compressed
- b. The pressure of the extra alveolar vessels affected by the tension of the lung parenchyma
- c. Pulmonary vascular resistance is affected by upstream and downstream pressure
- d.** Increase the arterial or venous pressure one at a time would increase the pulmonary vascular resistance because of capillary recruitment and distension
- e. Increase or decrease the lung volume would increase the pulmonary vascular resistance so we tend to breath at minimum pulmonary vascular resistance

14) Respiratory peripheral chemoreceptors ?

- a.** Carotid bodies respond to P_{O_2} , P_{CO_2} , and pH .
- b. Peripheral chemoreceptor response to arterial P_{CO_2} is more important than central chemoreceptor response.
- c. Aortic bodies are located within the aortic valve ring.
- d. Drop in P_{O_2} < 100 mmHg causes increase in firing rate.
- e. Carotid bodies respond to venous P_{O_2} .

15) A person with alveolar hypoventilation has?

- a. Arterial hypoxemia only
- b. Arterial hypoxemia and hypocapnea
- c. increased Alveolar— arterial oxygen gradient
- d.** Arterial hypoxemia and hypercapnea
- e. Normal P_{aCO_2} and P_{aO_2}

16) Monteleukast?

- a. Interacts and fits precisely to active site of leukotriene receptor
- b.** Used to control and prevent symptoms caused by asthma
- c. Causes uncontrolled muscle movements
- d. Causes rare serious allergic reactions
- e. Fits precisely to 5-lipoxygenase enzyme pocket

17) All the following are incorrect regarding lung adenocarcinoma, except?

- a. Most common type of lung cancer in men and nonsmokers.
- b. Grow slowly and form larger masses than other subtypes.
- c.** Occur as peripheral lesions, many with a central scar.
- d. They tend to metastasize widely at later stage.
- e. It arises in older persons.

18) Sphenoid air sinus opens into?

- a. Superior meatus
- b. Middle meatus
- c. Sphenoethmoidal recess**
- d. Bulla ethmoidalis
- e. Inferior meatus

19) A 65-year-old man develops pneumonia. The organisms isolated from the sputum are Gram-positive cocci in pairs that are alpha hemolytic on blood agar and sensitive to optochin. Which structure of the causal agent activates the complement and produce inflammatory cytokine production?

- a. Capsule.**
- b. Pneumolysin.
- c. M protein.
- d. Lipoteichoic acid.
- e. IgA protease.

20) The most relevant clinical application of Dalton's law in alveolar ventilation?

- a. 106 mmHg of oxygen and 40 mmHg to 50 mmHg of CO₂ inside the alveoli
- b. In order for the gas to go through the blood gas barrier the gas particles need to dissolve first and then they need to diffuse to bloodstream.
- c. O₂ is going to drop down from 80-100 mmHg inside the bloodstream
- d. Hypoventilation tends to cause hypercapnia first because the CO₂ is going to climb much bigger than O₂
- e. CO₂ dropped down to 35-45 mmHg because CO₂ is 20 times soluble than the oxygen

21) Which statement regarding drugs used in treatment of asthma is WRONG?

- a. Glucocorticoids are direct bronchodilators**
- b. Cromoglicate is not used in acute asthmatic attacks
- c. Leukotriene antagonists are useful in aspirin-induced asthma
- d. Omalizumab is used as prophylaxis of asthma
- e. Oral prednisolone is used in severe asthmatic attacks

22) One of the following is not true regarding tuberculosis?

- a. M. tuberculosis secretes no toxins, and its virulence is based on the properties of its cell wall.
- b. Infection represents only the presence of organisms and in most cases does not cause clinical disease.
- c. Non- Caseating granulomas are characteristic, surrounded by lymphocytes and activated macrophages.**
- d. Extra pulmonary involvement occurs in more than 50% of patients with severe immune deficiency.
- e. HIV is associated with an increased risk of tuberculosis, due to diminished T-cell immunity.

23) All following about treatment of asthma are TRUE EXCEPT?

- a. Salbutamol has rapid and short duration of action
- b. Salmeterol is used for treatment of acute asthmatic attacks**
- c. Aminophylline can be administered slowly IV in status asthmaticus
- d. Inhalation ipratropium is given in status asthmaticus
- e. Salbutamol side effects: hypokalemia

24) Regarding the most important air way cross sectional implication in lung disease?

- a. The total cross-sectional area of each generation of air way doesn't change at all**
- b. Like trumpet where you have got a long initial part and flaring at the end of trumpet
- c. The forward of gas velocity in enormous cross-sectional area becomes very small by convection
- d. Bronchitis the first changes take place in terminal bronchi
- e. The diffusion rate of pollutants is much small and massive compared to the air way particles

25) Which of the followings is INCORRECT regarding Histoplasmosis?

- a. Causing disease that mimics TB
- b. This fungus is a dimorphic lives and grows best in soil mixed with bird or bat excreta
- c. Found as yeast form in tissues
- d. Endemic in the United States
- e. The capsule allows it to escape from the immune system**

26) If you have given the following values in hypoxic patient; PAO₂=50mmHg and PACO₂=80mmHg What inspired O₂ concentration is required to return the alveolar P_{O₂} to normal?

- a. 28%**
- b. 100%
- c. 40%
- d. 50%
- e. 80%

27) A 59-year-old man has a history of excessive smoking. For the past 5 years, he has had a cough productive of copious amounts of mucoid sputum for over 3 months at a time. He has had multiple episodes pneumonia, last one complicated by septicemia and he died. At autopsy, his bronchi microscopically revealed Reid index of 0.8. Which of the following diagnoses is likely to explain his clinical course?

- a. Bronchial Asthma
- b. Chronic bronchitis.**
- c. Bronchiectasis.
- d. Squamous cell carcinoma.
- e. Centiacinar emphysema.

28) The most important implication in alveolar ventilation equation?

- a. Calculating total ventilation
- b. Calculating P_{O2}
- c. Calculating alveolar ventilation rate**
- d. Calculating PCO₂
- e. Calculating VC_{O2} rate

29) Regarding Asthma all the following statements are correct EXCEPT?

- a. Adult males have a higher rate than females**
- b. It is two times greater in boys than girls
- c. It is more common in the young age than the old age
- d. It's worldwide prevalence rate is 1 -18%.
- e. More than 80% of its mortality occurred in low and middle income countries

30) By comparing the dynamic pulmonary fluid exchange with peripheral one?

- a. Pulmonary capillary pressure is equal with capillary pressure in the peripheral tissues that is about 17mmHg
- b. Interstitial lung fluid pressure is slightly negative than that in peripheral tissues**
- c. Pulmonary capillaries are more permeable to protein so colloidal osmotic pressure is about 14mmHg with less than half this value in peripheral tissues
- d. The alveolar walls are extremely thin, which allows dumping of fluid from the interstitial spaces into the alveoli
- e. The excess fluid is carried away through the lymphatics and absorbed by capillaries in pulmonary circulation

31) Regarding Infection with mumps and parainfluenza viruses all are true EXCEPT?

- a. Mumps orchitis could be a complication of mumps if infection occurs in post-pubertal males
- b. Infection with mumps virus could not confer immunity after a single infection, especially if the infection was a unilateral one**
- c. Infection with mumps and parainfluenza viruses occurs via respiratory droplets
- d. In parainfluenza virus infection, croup is a clinical manifestation in children under 5 years
- e. Mumps virus infection is preventable by immunization

32) Mycoplasma pneumonia, which one is wrong?

- a. Can cause atypical pneumonia
- b. Colonies have fried eggs appearance
- c. Penicillin cannot be used in treatment because mycoplasma has no cell wall
- d. Diagnosis is mainly serology
- e. Can be prevented by a vaccine**

33) Nasal placodes are?

- a. Ectodermal swellings
- b. Parts of maxillary swellings
- c. Endodermal swellings
- d. Parts of mandibular swellings
- e. Mesodermal swellings

34) One of the following sentences is CORRECT about Bronchiectasis?

- a. Characteristic symptoms is dry, non productive cough.
- b. It is always associated with history of smoking.
- c. Characterized by permanent enlargement of the air spaces distal to the terminal bronchioles.
- d. Diagnosis defined by persistent productive cough for at least 3 consecutive months in at least 2 consecutive years.
- e. Obstruction and chronic infections are two intertwined processes contribute to its development.

35) Which of the following is NOT TRUE regarding a patient has a pneumonia with PO₂ =75mmHg and O₂ sat=88% and PCO₂=55mmHg?

- a. Right shift oxyhemoglobin dissociation curve
- b. Oxygen delivery to body tissue is very good
- c. Acidosis
- d. Very emergency case and need immediate ventilation
- e. Although the patient is hypoxic the body tissue is not

36) In a young asthmatic patient with arterial hypoxia during acute severe attack?

- a. The arterial Pco₂ would be expected to be high
- b. A low arterial Pco₂ would be expected and if high, would be cause for concern
- c. A low arterial Pco₂ would be expected but if high, would not be an Important problem
- d. 21% oxygen is the appropriate inspired gas.
- e. Pulsus paradoxus can not be detected

37) Which of the followings is INCORRECT regarding P. westermani?

- a. Surgical removal of the cyst is the most efficient treatment
- b. Surgical removal excludes recurrence
- c. Treated by PAIR method
- d. Intradermal test (Casoni test)
- e. Calcified cyst can be seen by X-ray

38) Regarding control of ventilation ?

- a. The inspiratory area is in the lower pons
- b.** Normal respiration will not occur without the pneumotaxic center
- c. Central chemoreceptors respond less rapidly to changes in plasma pCO₂ than the peripheral chemoreceptors
- d. Peripheral chemoreceptors respond to P_O₂ changes only.
- e. The apneustic center allows rapid transition between inspiration and expiration.

39) 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 of methemoglobin
- c. Oxyhemoglobin and deoxyhemoglobin have the same affinity for protons (H⁺)
- d. Buffers effectiveness does not depend upon their concentration
- e. Maintenance of blood pH relies solely on the bicarbonate buffering system

40) Which one of the following statements correctly describes binding and transport of O₂ by hemoglobin (Hb)?

- a. O₂ binds to hemoglobin more strongly than does CO
- b. The binding of O₂ to hemoglobin causes a charge change in the iron of the heme
- c. Each of the four heme in Hb binds O₂ independently
- d.** Two hydrophobic side chains on the O₂-binding side of the heme, valine E11 and Phe CD1 help hold the heme in place
- e. The acidic environment allows hemoglobin to bind O₂ more strongly

41) Regarding the lung. select the correct answer?

- a. The pulmonary ligaments are related to secondary bronchi
- b.** The primary bronchus is generally posterior in the hilum
- c. The pulmonary artery, at the hilum, usually is found anterior and inferior to the bronchus
- d. The term diaphragmatic pleura usually refers to a visceral layer of pleura
- e. The horizontal fissure is usually at the level of the 10th rib

42) Which of the followings is CORRECT regarding E. granulosus?

- a. The hydatid infection in human can be detected by stool analysis
- b. The egg in the sheep stool is infectious to human
- c. The hydatid cyst in the dog's tissue is formed after ingesting infected sheep
- d. Protoscolices are the infective stage to human
- e.** Dogs are infected after ingesting cyst from infected goat

43) Troika is a term can be read in medical books refers to:

- a. The intercostal nerve and vessels
- b. The intercostal muscles
- c. The two anterior arteries and the one posterior intercostal artery
- d. Any tirade in the body
- e. It is a Russian sleigh

44) All the following are characteristics of small cell lung carcinoma, except?

- a. Atypical cells with prominent nuclei could be seen in the cytological specimens.
- b. Mitotic figures are seen rarely.
- c. The neoplastic cells are usually third the size of resting lymphocytes.
- d. Necrosis may be extensive.
- e.** Presented as peripheral located masses with extension into lung parenchyma.

45) Antioxidant enzymes, choose the wrong statement of the following?

- a. Superoxide dismutase is called the primary defence against oxidative stress
- b. Glutathione peroxidases reduces hydrogen peroxide to nontoxic alcohols
- c.** Hydrogen peroxide is highly reactive free radical but has limited lipid solubility
- d. Catalase is found in peroxisomes and cytosol
- e. 6556 is reduced to glutathione by glutathione reductase

46) Which of the followings is a characteristic of Diphtheria pseudomembrane?

- a. Easily removed
- b. Has no clear borders
- c. Similar to the group A Strep pharyngitis
- d.** Bled easily in removal
- e. Has no further complications

47) Hering-breuer inflation reflex?

- a. Generated by pulmonary irritant receptors located in bronchioles and bronchi.
- b.** signals from these receptors travel via the vagus nerve to the respiratory center.
- c. Causes stimulation of inspiration.
- d. Active during normal quiet breathing.
- e. stimulated by alveolar inflammation, pulmonary congestion and lung deflation.

48) Which of the following is the main histologic finding in the organizing phase of diffuse alveolar damage in COVID-19 infection?

- a. Alveolar hemorrhage.
- b. Dense collagenous fibrosis.
- c. Fibrinoid necrosis of small vessels.
- d. Fibroblastic proliferation.
- e. Hyaline membrane formation.

49) Toxin complex that increases vascular permeability which leads to shock cell death and stimulates macrophages to release proinflammatory cytokines in B. anthracis infection is called?

- a. Lethal toxin
- b.** Edema toxin
- c. Nucleases
- d. CSa Peptidase
- e. Hyaluronidase



50) If carbon dioxide levels rise in the lungs, then the hydrogen ion levels in the blood?

- a. Will drop because additional bicarbonate ions are formed (via carbonic anhydrase), and this is a base that eliminates hydrogen ions.
- b. Will rise because carbon dioxide binds to bicarbonate ions.
- c.** Will rise because the formation of bicarbonate ions also creates hydrogen ions.
- d. Will drop because more carbon dioxide will be dissolved in the blood rather than forming carbonic acid.
- e. Will remain constant.

51) The following are adverse effects of first generation H1-antagonists EXCEPT?

- a. Sedation.
- b. Fatigue.
- c. Antimuscarinic effects.
- d.** Blindness
- e. Allergic reaction in topical use

52) A patient with Cystic Fibrosis develops pneumonia. A Gram-negative rod is cultured from her respiratory tract. On nutrient media it grows well and secretes large amounts of bright green pigment. Which organism below is most likely?

- a. B. Salmonella typhi
- b.** Pseudomonas aeruginosa
- c. Escherichia coli
- d. Serratia marcescens
- e. Klebsiella pneumonia

53) All the following drugs are effective ANTITUBERCULOUS drugs EXCEPT?

- a.** Paraaminosalicylic acid.
- b. Isoniazid.
- c. Rifampicin.
- d. Pyrazinamide.
- e. Ethambutol.

54) Each of the following statements correctly describes the costo-diaphragmatic recess?

- a.** It is an inferior extension of the pleural cavity
- b. It represents an area where the costal and diaphragmatic layers of parietal pleura do not can come into apposition with each other
- c. It is a supracompartment of the thoracic cavity
- d. It is usually found deep to the eighth intercostal spaces in the midaxillary line
- e. It is related to the clavicle

55) Leukotrienes?

- a. Produced by the S-lipoxygenase present in inflammatory cells
- b.** Mainly end products of leukotriene B4
- c. Some are produced by conjugation with glutathione to yield leukotriene C4
- d. Powerful chemotactic & activator of neutrophils.
- e. Cause bronchospasm, increase mucus secretion and capillary permeability

56) Which of the followings is mismatched regarding diphtheria?

- a. C. diphtheriae: Volutin granules
- b. Diphtheria: Due to the effect of DT
- c. DT: Inhibits protein synthesis in selected eukaryotic cells
- d. Myocarditis: Toxin absorption
- e.** Incubation period: 3 to 4 days

57) Which is WRONG regarding treatment of pneumonias?

- a. Benzylpenicillin IV is used in community acquired pneumonia
- b.** Flucloxacillin is useful in atypical pneumonia
- c. Cefotaxime plus gentamicin are used in nosocomial pneumonia
- d. Co-trimoxazole is used in Pneumocystis carinii pneumonia in AIDS
- e. Piperacillin is used in Pneumonia in immunocompromised patients

58) One of the following is not among the hallmark of Asthma?

- a. Intermittent, reversible airway obstruction.
- b. Chronic bronchial inflammation with eosinophils.
- c.** Permanent enlargement of the air spaces distal to the terminal bronchioles.
- d. Bronchial smooth muscle cell hypertrophy and hyperreactivity.
- e. Increased mucus secretion.

59) CO₂, choose the wrong statement?

- a. About 10% of the CO₂ in our blood is simply dissolves in plasma
- b. The carbonic anhydrase of the RBC combine CO₂ and H₂O to form H₂CO₃
- c.** Increase in pCO₂ causes a left shift to Hb-O₂ dissociation curve meaning additional O₂ can suppl the tissue
- d. About 20% of CO₂ is transported as carbamino hemoglobin
- e. Respiratory acidosis may occur when there is retention of CO₂

60) Regarding the openings in the Diaphragm: Select the wrong one:

- a. The caval opening lies at the level of the 8th thoracic vertebra
- b. The esophageal opening transmits the thoracic duct
- c. The esophageal opening lies at the level of the 10th thoracic vertebra
- d. The aortic opening lies anterior to the body of the 12th thoracic vertebra
- e. The caval opening transmits the inferior vena cava

61) Regarding clinical uses of H1-antagonists, all the following are true EXCEPT?

- a. Adjunctive treatment of anaphylaxis
- b. Sedation.
- c. Antiallergy.
- d. Antivertigo.
- e. Zollinger-Ellison Syndrome.**

62) Regarding TB one statement is not correct?

- a. About 25% of the world's population having latent TB
- b. Active TB person yearly can infect 15 -25 individuals**
- c. Almost 1.5 million People die from TB each year
- d.
- e.

63) Semisulcospira is the infected stage of?

- a. Aspergillosis
- b. Hydatidosis
- c. Histoplasmosis
- d. Paragonimiasis**
- e. E. granulosus

64) All the following are related to Pancoast tumors. except?

- a. Apical neoplasms invade the cervical sympathetic plexus.
- b. Cause severe pain in the distribution of the radial nerve.**
- c. Produce Horner syndrome.
- d. Accompanied by destruction of the first and second ribs.
- e. Apical neoplasms invade the brachial sympathetic plexus.

65) Which of the following paranasal sinuses communicates with the nasal cavity in the superior meatus?

- a. Posterior ethmoidal sinuses**
- b. Middle ethmoidal sinuses
- c. Frontal sinus
- d. Sphenoidal sinus
- e. Anterior ethmoidal sinus

66) The total number of manubrium articulation is:

- a. Two articulations
- b. One articulation
- c. Three articulations
- d. Five articulations
- e. Four articulations

67) One of the following is true regarding Sarcoidosis?

- a. It is a systemic granulomatous disease with an infectious etiology.
- b. Characterized by Caseating granulomas in virtually all tissues.
- c.** Sarcoidosis is likely a disease of disordered immune response in genetically predisposed individuals to certain environmental agents.
- d. Less than ten percent of cases involve hilar lymph nodes or lung.
- e. Male gender, Asian ethnicity among the increased risk categories.

68) A patient came from India with a history of weight loss, night sweats and cough with blood. Sputum showed acid fast bacilli. Which one is TRUE?

- a.** Likely diagnosis is tuberculosis and is commonly transmitted via respiratory route
- b. Likely diagnosis is legionella and is commonly transmitted via water droplets
- c. Likely diagnosis is H.influenza and is commonly transmitted via respiratory droplets
- d. Likely diagnosis is mycoplasma and is commonly transmitted via respiratory droplets
- e. This is most likely a normal flora and no action is needed

69) The vocal ligaments extend from :

- a. Vocal process of the cricoid cartilage and thyroid cartilage
- b. Muscular process of the arytenoid cartilage and thyroid cartilage
- c. The epiglottis cartilage and arytenoid cartilage
- d.** Vocal process of the arytenoid cartilage and thyroid cartilage
- e. Muscular process of the cricoid cartilage and thyroid cartilage

70) Which of the following statements about the olfactory epithelium is CORRECT?

- a.** Olfactory receptor cells provide large surface area to adapt the transmembrane chemoreceptors
- b. Basal cells express abundant ion channels which play role in signal transduction
- c. Supporting cells divide to replace worn out olfactory receptor cells
- d. Olfactory receptor cells synthesize and secrete odorant binding proteins
- e. Supporting cells are provided with basal afferent nerve fibers that send sensory information to the trigeminal (5th) nerve

71) Boric acid (H_3BO_3) $pK_a=9.3$, we can describe boric acid solution at $pH=7$ as?

- a. The concentrations of boric acids and its conjugate base are equal
- b.** The concentrations of boric acid is more than its conjugate base
- c. The concentrations of conjugate base of boric acid is more than boric acid
- d. Boric acid loses its acidity
- e. Boric acid as a whole dissociate and become a conjugate base

72) All following about treatment of respiratory tract infection are TRUE EXCEPT?

- a. Nasal decongestants are used in acute sinusitis
- b. Co-amoxiclav is used in treatment of chronic sinusitis
- c. Amoxicillin is used in acute otitis media
- d. Ciprofloxacin is used in acute bronchitis**
- e. Benzylpenicillin is used in follicular tonsillitis

73) The bulla ethmoidalis is formed by:

- a. Anterior ethmoidal sinuses
- b. Middle ethmoidal sinuses**
- c. Maxillary sinuses
- d. Sphenoid sinuses
- e. Posterior ethmoidal sinuses

74) Which of the followings is mismatched regarding H. influenzae?

- a. The typeable H. influenzae: Causes primary infection
- b. Capsulated H. influenzae: Divided into five serotypes**
- c. H. influenzae type b: Strongly virulent
- d. Peak incidence: From 6 months to 1 year
- e. H. influenzae Infection: dysphagia

75) The heme group found in haemoglobin (choose the correct statement)?

- a. Coordinates the iron atom in the plane of the heme only when oxygen is bound.**
- b. Contains a centrally bound Fe³⁺ atom.
- c. Is not found in myoglobin
- d. Is held within the central cavity formed between the four hemoglobin subunits
- e. The pyrrole has four porphyrins subunits interconnected via α -methylene bridges

76) Regarding Idiopathic pulmonary fibrosis, one of the following is not true?

- a. Honeycomb lung is caused by destruction of the alveolar architecture.
- b. Insidious onset between ages 40 and 70 years.
- c. The most commonly presenting symptoms are dyspnea and a dry cough.
- d. Anti-inflammatory and anti-proliferative therapies are curative.**
- e. The etiology is related to abnormal wound healing (TGF- β) is the likely driver.

77) To increase the thoracic cavity and keep intrapleural pressure negative, all the followings are correct EXCEPT?

- a. Elasticity of the lung
- b. Surface tension
- c. Elasticity of the chest wall
- d. Lymphatic drainage
- e. Gravity**

78) A 25- year old pregnant female who is 24 weeks gestation presented to the labor and delivery ward. She has no underlying medical problems. She was 5 cm dilated and having continuous contractions. The newborn (700 gram) was delivered 10 hours later. Shortly after birth the neonate manifested with fast breathing, fast heart rate, chest contractions and blue discoloration of the skin. He was admitted to the neonatal ICU and placed on conventional ventilator. The condition is most probably due to _____ ?

- a. Damage of type I pneumocytes by Covid -19 virus
- b.** Lack of oxygen due to insufficiency of type II pneumocytes
- c. The alveoli are loaded with dust cells
- d. Immaturity of type II pneumocytes
- e. Inadequate alveolar collateral ventilation

79) Each of the following statements concerning influenza viruses is correct EXCEPT?

- a. Major epidemics of the disease are caused by influenza A virus
- b.** The neuraminidase on the virion surface mediates the interaction of the virus with the receptors on the respiratory tract epithelium
- c. The virion contains an RNA genome with negative polarity
- d. Likely sources of new antigens for influenza A viruses are the viruses that cause influenza in animals
- e. H1N1 is a swine flu virus

80) One of the following features is correct for Adenocarcinoma in situ (AIS)?

- a. The diameter is more than 3 cm.
- b. The growth is multilayer along the alveolar septa.
- c. Preservation of alveolar architecture with stromal invasion.
- d.** The tumor cells are mucinous, nonmucinous or mixed.
- e. It presented as multiple nodules involving the central part of the lung.

