Semiology of respiratory system in children

Simple choice

1. Mark the intrauterine age of lung development onset from the gut:
   a) 1 week
   b) 24 days
   c) 6 weeks
   d) 12 weeks
   e) 35 weeks
2. Stridor is not characteristic for one of the following disorder:
   a) Epiglottitis
   b) Laryngotracheitis
   c) Tracheitis
   d) Laryngomalacia
   e) Obstructive bronchitis
3. External respiration refers to the exchange of oxygen and carbon dioxide between:
   a) Alveoli and bloodstream
   b) Outside air and cells of the body
   c) Bloodstream and cells
   d) Lungs and heart
   e) Alveoli and lymphatic vessels
4. Which organ of the respiratory system is used by both the respiratory and digestive systems?
   a) Pharynx
   b) Stomach
   c) Trachea
   d) Nasal cavity
   e) Larynx
5. Which serious lung infection causes the alveoli to fill up with fluid?
   a) Tuberculosis
   b) Pneumoconiosis
   c) Pneumonia
   d) Pulmonary fibrosis
   e) Atelectasis
6. Which diagnostic procedure measures the oxygen level in the blood?
   a) Ventilation-perfusion scan
   b) Oximetry
   c) Bronchography
   d) Polysomnography
   e) Spirometry
7. Percussion in acute obstructive bronchitis will reveal the following sound:
   a) Clear lung sound
   b) Diffuse box sound
   c) Diffuse dullness
   d) Dullness in lower parts of the lung
   e) Dullness in upper parts of the lung
8. Auscultation in acute obstructive bronchitis will reveal the following finding:
   a) Prolonged inspiration
   b) Decrease of breathing
   c) Diffuse dry rhonchi
   d) Localized crackles
   e) Local wet rhonchi
9. Impaired gas exchange in the blood related to pulmonary emphysema is characterized by:
   a) Increased O_2 and CO_2
   b) Decreased O_2 and CO_2
   c) Decreased O_2 and increased CO_2
   d) Increased O_2 and decreased CO_2

e) Normal level of O_2 and CO_2

10. Select the characteristics of right bronchus explaining the common localization of aspirated foreign body:
    a) Is shorter, wider, almost a direct line with the trachea
    b) Crosses anterior to the esophagus
    c) Is shorter, narrowed, the angle this trachea is acute
    d) Is shorter, wider, the angle this trachea is obtuse
    e) Is well vascularized with narrow lumen
11. Diffuse dry rhonchi are characteristic for one of the following disease:
    a) Community-acquired pneumonia
    b) Acute obstructive bronchitis
    c) Congenital heart defect
    d) Acute laryngitis
    e) Rhinopharyngitis
12. Crackles are characteristic for one of the following disease
    a) Confluent pneumonia
    b) Acute simple bronchitis
    c) Bronchial asthma
    d) Laryngotracheitis
    e) Acute obstructive bronchitis
13. Normal respiratory rate in a 2 years old child is:
    a) 25-40
    b) 40-50
    c) 25-35
    d) 18-20
    e) 15-16
14. Barrel chest is characteristic for:
    a) Pleural effusion
    b) Cystic fibrosis
    c) Complicated pneumonia
    d) Bronchial asthma
    e) Acute simple bronchitis
15. Normal respiratory rate in a new-born child is:
    a) 18-20
    b) 16-18
    c) 30-40
    d) 45-60
    e) 20-30
16. How many bronchopulmonary segments form the right lung:
    a) 9
    b) 10
    c) 11
    d) 12
    e) 8
17. What is the definition of tachypnea in children 2-12 month old:
    a) >50 breaths/min
    b) >80 breaths/min
    c) >60 breaths/min
    d) >40 breaths/min
    e) >35 breaths/min
18. What is the definition of tachypnea in children 1-5 years old:
    a) >50 breaths/min
    b) >80
    c) >60
    d) >40

e) >35

19. The most common localization of foreign body in bronchial tree is:
    a) Left bronchus
    b) Right bronchus
    c) Trachea
    d) Bifurcation of the trachea
    e) Bronchioles
20. Peakflowmetry provides information about:
    a) Pulmonary forced vital capacity (FVC)
    b) Maximum peak expiratory flow (PEF)
    c) Content of carbon dioxide in exhaled air
    d) Residual lung volume
    e) Restrictive lung changes

Multiple choice

1. The peculiarities of the nose in small children are:
    a) Nose pyramid consists particular of cartilage
    b) Narrowed nasal meatuses
    c) Absence of inferior nasal meatus
    d) Undeveloped nasal mucous membrane
    e) Undeveloped nasal submucous membrane
2. The peculiarities of sinuses in children are:
    a) The maxillary sinuses are present at birth
    b) The frontal and ethmoid sinuses begin to develop later in childhood
    c) The sphenoid sinuses develop in early infancy
    d) All the sinuses are present at birth
    e) The maxillary sinuses develop in puberty
3. The peculiarities of the pharynx in new-born child
    a) The pharynx is relatively small and narrow
    b) The auditory tubes are small, wide, straight and horizontal
    c) The pharynx is relatively large and narrow
    d) Palatine tonsils are well developed
    e) Waldeyer's lymphatic ring is underdeveloped
4. The peculiarities of the larynx in new-born child
    a) Is funnel-shaped
    b) The cricoid's cartilage is well developed
    c) The fissure of glottis is narrow
    d) Vocal ligaments are relatively short
    e) Vocal ligament are pour vascularized
5. The peculiarities of the trachea in children are:
    a) The cartilage rings are well developed
    b) It is composed of 7 cartilage rings
    c) The bifurcation of the trachea lies opposite the 4^{th} thoracic vertebra
    d) Mucus membrane is soft, well vascularized
    e) The cartilage rings are incomplete developed
6. The peculiarities of the bronchi:
    a) The lumen is relatively wide
    b) The right bronchus is a straight continuation of the trachea
    c) The muscle and elastic fibers are undeveloped
    d) The lumen is narrow
    e) The wall resistance is small
7. The peculiarities of the lungs in children are:
    a) Size of alveoli is smaller than in adults
    b) Size of alveoli is larger than in adults

c) Quantity of alveoli is relatively less than adults
d) Collateral ventilation is well developed
e) Number of the alveoli does not increase with age

8. Disorders of the respiratory rate include:
   a) Tachypnea
   b) Bradypnea
   c) Dyspnea
   d) Apnea
   e) Hyperpnea
9. Disorders of the respiratory depth:
   a) Hyperpnea
   b) Hypoventilation
   c) Hyperventilation
   d) Tachypnea
   e) Bradypnea
10. Pathological localized dullness is cause of:
   a) Pneumonia
   b) Hydro-, haemothorax
   c) Pulmonary edema
   d) Lung or mediastinal tumor
   e) Pulmonary emphysema
11. Bandbox resonance on percussion is cause of:
   a) Pulmonary emphysema
   b) Bronchial asthma
   c) Pneumonia
   d) Pneumothorax
   e) Hydro-, haemothorax
12. The lower airways include the following:
   a) Alveoli
   b) Pharynx
   c) Bronchioles
   d) Larynx
   e) Trachea
13. Wheezing on auscultation is specific for following disorders:
   a) Acute obstructive bronchitis
   b) Community-acquired pneumonia
   c) Bronchial asthma
   d) Rhino-pharyngitis
   e) Pleurisy
14. The main functions of the lung are:
   a) Ventilation and gas exchange
   b) Synthesis, activation and inactivation hormones
   c) Haemostatic functions
   d) Complement activation, leucocyte recruitment
   e) Transport of nutrients to tissues
15. Factors related to the development of broncho-obstructive syndrome in children are:
   a) Small size of bronchial lumen
   b) Physiological immunodeficiency
   c) Allergy in anamnesis
   d) Community-acquired pneumonia
   e) Increased resistance of bronchial wall
16. Factors related to the development of laryngeal stenosis in children are:
   a) Increased deformability laryngeal cartilages
   b) Narrowed lumen of the larynx
   c) Well vascularized laryngeal mucosa

d) “Funnel shaped” larynx
e) Well development lymphoid tissue in laryngeal submucosal layer

17. Factors related to the development of pulmonary atelectasis in infants are:
    a) Good development of interstitial lung tissue
    b) Insufficient development of elastic tissue of the lungs
    c) Insufficient diaphragmatic excursion
    d) High pulmonary vascularization
    e) Predominant supine position
18. Abdominal type of breathing in young children is due to:
    a) Short, cylindrical chest
    b) Predominant supine position
    c) High position of the diaphragm
    d) Low diaphragmatic excursion
    e) Relatively large size of the heart
19. Specify pediatric disorders with wet rhonchi on auscultation:
    a) Acute bronchitis
    b) Pneumonia
    c) Pulmonary edema
    d) Laryngitis
    e) Pleurisy
20. Highlight clinical symptoms characteristic for obstructive syndrome in children:
    a) Inspiratory dyspnea
    b) Expiratory dyspnea
    c) Wheezing
    d) Localized wet rhonchi
    e) Diffuse dry rhonchi
21. Asymmetrical chest expansion during breathing is characteristic for the following pathologies:
    a) Acute obstructive bronchitis
    b) Lobar pneumonia
    c) Pneumonia complicated with exudative pleurisy
    d) Emphysema
    e) Pneumosclerosis
22. Auscultation findings in pleural effusion in children are:
    a) Wheezing
    b) Decreased breath sound on affected side
    c) “Silent lung”
    d) Friction rub
    e) Increased breath sound on affected side
23. Decreased vesicular sound on auscultation is characteristic for:
    a) Acute simple bronchitis
    b) Pneumonia
    c) Bronchial asthma
    d) Pleurisy
    e) Pneumosclerosis
24. Expiratory dyspnea is present in the following pathologies:
    a) Bronchial asthma
    b) Acute obstructive bronchitis
    c) Pneumonia
    d) Acute bronchiolitis
    e) Acute laryngitis
25. Inspiratory dyspnea is present in the following pathologies:
    a) Laryngotracheitis
    b) Bronchial asthma
    c) Foreign body aspiration

d) Congenital stridor
e) Diphtheria

26. Respiratory failure in young children is characterized by the following signs:
    a) Accelerated breathing
    b) Nasal flaring
    c) Acrocyanosis at rest or during effort
    d) Hacking cough
    e) Chest retractions
27. Decreased breath sound is characteristic for the following pathologies:
    a) Pleural effusion
    b) Collapse/Atelectasis
    c) Pneumothorax
    d) Pneumonia
    e) Acute simple bronchitis
28. Decreased percussion sound is characteristic for the following changes:
    a) Pleural effusion
    b) Consolidation
    c) Collapse
    d) Fibrosis
    e) Hyperinflation
29. Criteria for the diagnosis of acute respiratory failure in children include the following:
    a) Respiratory rate
    b) Excessive respiratory effort
    c) Chest X ray
    d) Lung ultrasound
    e) Gas exchange (pO_2, pCO_2)
30. Major indications for diagnostic bronchoscopy in children are:
    a) Bronchial asthma
    b) Acute simple bronchitis
    c) Persistent unexplained cough or wheeze
    d) Suspected foreign body in tracheobronchial tree
    e) Suspected tracheoesophageal fistula
31. Tachypnea in children is characteristic for the following disorders:
    a) Pneumonia
    b) Acute bronchiolitis
    c) Coma
    d) Brain injury
    e) Barbiturate intoxication
32. Bradypnea in children is characteristic for the following disorders:
    a) Anemia
    b) Barbiturate intoxication
    c) Brain injury
    d) Destructive pneumonia
    e) Fever
33. Friction rub on auscultation is characteristic for:
    a) Pleural tuberculosis
    b) Exudative pleurisy
    c) Pleural adhesions
    d) Fibrinous pleurisy
    e) Pleural tumor

34. Increased work of breathing includes the following:
    a) Nasal flaring
    b) Grunting
    c) Chest indrawing

d) Finger clubbing
e) Chest asymmetry

35. Secondary radiological findings in foreign body aspiration in children are:
    a) Hyperinflation
    b) Lobar or segmental atelectasis
    c) Mediastinal shift
    d) Pneumomediastinum
    e) Consolidation
36. The measurements which are usually made by spirometry are as follows:
    a) Vital capacity
    b) Forced vital capacity
    c) Forced expired volume in one second
    d) Forced expiratory flow over the middle half of the FVC
    e) Respiratory rate
37. Hypoxemic respiratory failure is characterized by:
    a) Arterial oxygen tension (pO2) lower than 60 mm Hg
    b) Normal or low arterial carbon dioxide tension (pCO2)
    c) Diffusion impairment
    d) Decreased ventilation/perfusion ratio
    e) Overall alveolar hypoventilation
38. Hypercapnic respiratory failure is characterized by:
    a) pCO2 higher than 50 mm Hg
    b) pH less than 7.3
    c) Arterial oxygen tension (pO2) lower than 60 mm Hg
    d) Normal or low arterial carbon dioxide tension (pCO2)
    e) Diffusion impairment

Semiology of respiratory system in children

Cs	CM	
1. B	1. ABCE	15. ACE
2. E	2. ABC	16. BCE
3. A	3. ABE	17. BCE
4. A	4. ACD	18. ACD
5. C	5. DE	19. ABC
6. B	6. BCD	20. BCE
7. B	7. AC	21. BCE
8. C	8. ABD	22. BD
9. C	9. ABC	23. BDE
10.A	10. ABD	24. ABCE
11.B	11. ABD	25. ACDE
12.A	12. ACE	26. ABCE
13.A	13. AC	27. ABC
14.D	14. ABCD	28. ABCD
15.D		29. ABE
16.B		30. CDE
17.A		31. AB

18.D 19.B 20.B		32. BC 33. ACDE 34. ABC 35. ABCD 36. ABCD 37. ABCD 38. AB