EXAM NUMBER _____

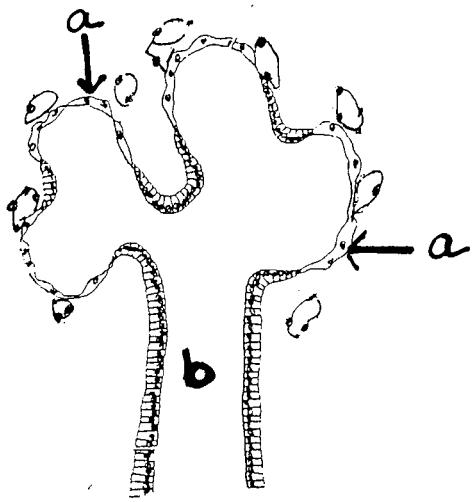
STRUCTURAL BASIS OF MEDICAL PRACTICE

EXAMINATION 9A

August 30, 2007

Part I. Answer in the space provided.

A. With respect to the picture at the right:



1. Identify the stage of lung development depicted in the picture.

_____

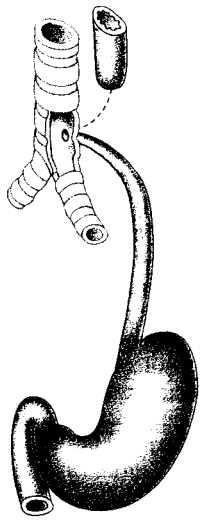
2. Identify the structure indicated by "a".

_____

3. Identify the structure indicated by "b".

_____

B. With respect to the picture at the right:



4. What clinical defect is depicted by this diagram?

_____

Part II. Circle the correct answer.

5. A bronchopulmonary segment is defined as:

A. Alveolar-capillary junction
B. Left primary bronchus and its branches
C. Lung-trachea juxtaposition
D. Right primary bronchus and its branches
E. Segment of lung tissue supplied by a tertiary bronchus

6. The trachea is derived from:

A. Hypobranchial eminence
B. Elongation of bronchial buds
C. Pharyngeal arch IV
D. Respiratory diverticulum
E. Tracheoesophageal septum

7. The lung bud:

A. Appears in the embryo at approximately 8 weeks
B. Arises as an outgrowth of the ventral wall of the foregut
C. Degenerates before day 28
D. Forms the trachea and the bronchial buds
E. Is associated with the third pharyngeal pouch

8. With regards to lung development, which statement is *incorrect*:

A. Alveolar epithelium is composed of Type I and Type II alveolar cells.
B. Type II pneumocytes secrete surfactant.
C. Surfactant reduces the surface tension at the air-epithelium interface.
D. Alveoli number between 5 and 10 million per adult lung.
E. Right bronchus is divided into 3 lobes; the left bronchus is divided into 2 lobes.

9. All of the following contribute to forming the diaphragm *except*:

A. Dorsal mesentery of the esophagus
B. Lateral body walls
C. Pleuroperitoneal membranes
D. Pleuropericardial folds
E. Septum transversum

10. The tracheoesophageal septum separates the:

A. Esophagus and oropharynx
B. Esophagus and laryngotracheal tube
C. Esophagus and nasopharynx
D. Laryngotracheal tube and oropharnyx
E. Laryngotracheal tube and nasopharnyx

11. An infant presenting with facial dysmorphology, ventricular septal defects, and IQ <70 most likely has been exposed *in utero* to:

A. Warfarin
B. Radiation
C. Alcohol
D. Valproic acid
E. Tobacco

12. Which teratogen and target structure(s) or defects is linked *incorrectly?*

A. Phenytoin ---- nails, facial defects, CNS
B. Valproic acid – neurotube defects
C. Methotrexate -- bone defects, yellow teeth
D. Thalidomide – phocomelia
E. Anti-epileptic drugs – microcephaly, hypoplasia of face

13. Minimata Bay Syndrome is characterized by microencephaly and deafness. The most likely teratogen(s) associated with this syndrome is:

A. Phenytoin
B. Methotrexate
C. Methylmercury
D. Accutane®
E. Selected Serotonin Reuptake Inhibitors (SSRIs)

14. Exposure of a pregnant women to which of the following infectious agents may result in microencephaly, deafness, cataracts and congenital heart disease?

A. Rubella virus
B. Cytomegalovirus
C. Human immunodeficiency virus
D. Varicella virus
E. Herpes simplex virus

15. How long does the "critical period" last for the central nervous system?

A. Weeks 0-3
B. Weeks 0-5
C. Weeks 2-5
D. Weeks 2-12
E. Weeks 2-32