THORAX

1. The following statements concerning the trachea are true *except:*

a) It lies anterior to the esophagus in the superior mediastinum
b) In deep inspiration the carina may descend as far as the level of the sixth thoracic vertebra
c) The left principal bronchus is wider than the right principal bronchus
d) The arch of the aorta lies on its anterior and left sides in the superior mediastinum
e) The sensory innervation of the mucous membrane lining the trachea is derived from branches of the vagi, ad the recurrent laryngeal nerves

2. The following statements concerning the root of the right lung are true *except:*

a) The right phrenic nerve passes anterior to the lung root
b) The azygos vein arches over the superior margin of the lung root
c) The right pulmonary artery lies posterior to the principal bronchus
d) The right vagus nerve passes posterior to the lung root
e) The vessels and nerves forming the lung root are enclosed by a cuff of pleura

3. The following statements concerning the right lung are true *except:*

a) It possesses a horizontal and an oblique fissure
b) Its covering of visceral pleura is sensitive to pain and temperature
c) The lymph from the substance of the lung reaches the hilum by the superficial and deep lymphatic plexuses
d) The pulmonary ligament permits the vessels and nerves of the lung root to move during movements of respiration
e) The bronchial veins drain into the azygos and hemiazygos veins

4. Which of the following structures does NOT form the anterior surface of the heart?

a) Right Ventricle
b) Right Atrium
c) Left Ventricle
d) Left Atrium
e) Right Auricle

5. In a postereoanterior radiograph of the thorax, which of the following structures does NOT form the left margin of the heart shadow:

a) Left Auricle
b) Pulmonary Trunk
c) Arch of Aorta
d) Left Ventricle
e) Superior Vena Cava

6. All of the following statements concerning the esophagus are correct *except*:

a) It receives an arterial blood supply from both the descending thoracic aorta and the left gastric artery
b) It is constricted by the presence of the left principal bronchus
c) It crosses from right to left posterior to the descending aorta
d) It pierces the diaphragm with the left vagus on its anterior surface and the right vagus on its posterior surface
e) It joins the stomach about 16 inches (41 cm) from the incisor teeth

7. All of the following statements concerning the mediastinum are correct *except*:

a) The mediastinum forms a partition between the two pleural cavities
b) The mediastinal pleura demarcates the lateral boundaries of the mediastinum
c) The heart occupies the middle mediastinum
d) Should air enter the left pleural cavity, the structures forming the mediastinum are deflected to the right
e) The anterior boundary of the mediastinum extends to a lower level than the posterior boundary

8. All of the following statements regarding the conducting system of the heart are true *except*:

a) The impulse for cardiac contraction spontaneously begins in the sinoatrial node
b) The atrioventricular bundle is the sole pathway for conduction of the waves of contraction between the atria and the ventricles
c) The sinoatrial node is frequently supplied by the right and left coronary arteries
d) The sympathetic nerves to the heart slow the rate of discharge from the sinoatrial node
e) The atrioventricular bundle descends behind the septal cusp of the tricuspid valve

9. All of the following statements regarding the mechanics of inspiration are true *except*:

a) The diaphragm is the most important muscle of inspiration
b) The suprapleural membrane can be raised
c) The sternum moves anteriorly
d) The ribs are raised superiorly
e) The tone of the muscles of the anterior abdominal wall is diminished

10. Which of the following statements concerning the lungs is correc*t?*

a) There are no lymph nodes within the lungs
b) The right lung is in direct contact with the arch of the aorta and the descending thoracic aorta
c) Inhaled foreign bodies most frequently enter the right lung
d) The structure of the lungs receive its blood supply from the pulmonary arteries
e) The costodiaphragmatic recesses are lined with visceral pleura

11. Which of the following statements concerning the blood supply of the heart is INCORRECT?:

a) The coronary arteries are branches of the ascending aorta
b) The right coronary artery supplies both the right atrium and right ventricle
c) The circumflex branch of the left coronary artery descends in the anterior interventricular groove and passes around the apex of the heart
d) Arrhythmias (abnormal heart beats) can occur after occlusion of a coronary artery
e) Coronary arteries can be classified as functional end arteries

12. Which of the following statements concerning the bronchopulmonary segments is INCORRECT?:

a) The veins are intersegmental
b) The segments are separated by connective tissue septa
c) The arteries are intrasegmental
d) Each segment is supplied by a secondary bronchus
e) Each pyramid-shaped segment has its base pointing toward the lung surface

13. Which of the following statements is (are) correct regarding the bronchopulmonary segments?:

a) The right lung has three segments
b) The arteries supplying each segment are segmental in position
c) The base of easch pyramid-shaped segment points towards the hilus
d) The veins draining each segment are segmental in position
e) There are no autonomic nerves within a segment

14. Which structure(s) compress(es) the posterior surface of the heart during cardiopulmonary resuscitation?

a) The body of the sternum
b) The heads of the ribs
c) The tracheal bifurcation
d) The inferior vena cava
e) The bodies of the thoracic vertebrae

15. Pericardiocentesis is best achieved by passing a needle through:

a) The fourth intercostals space
b) The sixth intercostals space at the left paravertebral border
c) The second intercostals space at the midclavicular line
d) The subcostal angle
e) The second intercostals space at the right sternal angle

16. The following statements concerning the main bronchi are true *except*:

a) The right main bronchus is wider than the left main bronchus
b) The right main bronchus is shorter than the left main bronchus
c) The right main brnchus is more vertical in position than the left main bronchus
d) The left main bronchus passes to the left and in front of the oesophagus
e) The left main bronchus gives off the superior lobar bronchus before entering the hilum of the lung

17. The following statements concerning the diaphragm are true *except:*

a) All the muscle of the diaphragm is supplied by the phrenic nerves
b) On contraction, the diaphragm increases the intrathoracic pressure
c) The right crus provides a sphincterlike mechanism for the esophagus
d) On contraction, the diaphragm assists in the return of venous blood to the right atrium and of lymph to the thoracic duct
e) When viewed from the front, the central tendon of the diaphragm lies behind the xiphisternal joint

18. Which of the following statements concerning the lungs is *incorrect*?

a) Each lung is very elastic, and should the thoracic cavity be opened by a stab wound, the lung shrinks to one-third or less in volume
b) The cardiac notch lies in the lower lobe of the left lung
c) The visceral pleura covering each lung lines the fissures that are situated between the lobes
d) The apex of each lung extend up into the root of the neck and lies anterior to the lower roots of the brachial plexus
e) The bronchi, connective tissue and visceral pleura of the lungs are supplied by the bronchial arteries

19. When aging, the following detrimental changes occur in the thorax *except*:

a) The ribs and costal cartilages become more rigid
b) The elastic tissue in the lungs tends to degenerate
c) The maubriosternal joint becomes more mobile
d) The thoracic and abdominal muscles tend to atrophy
e) The xiphoid process becomes ossified

20. The following anatomic events occur at the level of the sternal angle (angle of Louis) *except*:

a) The right and left pulmonary arteries enter the lungs
b) The right recurrent laryngeal nerve arises from the right vagus nerve
c) The trachea bifuricates
d) The ascending aorta becomes continuous with the arch of the aorta
e) The second costal cartilages articulate with the sternum

21. All of the following structures open into the right atrium *except*:

a) The superior vena cava
b) The coronary sinus
c) The anterior cardiac vein
d) The inferior vena cava
e) The right pulmonary veins

22. Sudden occlusion of the anterior interventricular branch of the left coronary artery produces infarction (tissue death) in which one of the following areas?

a) The entire diaphragmatic surface of the left ventricle
b) The anterior part of the ventricular septum and the anterior (septal) papillary muscle of the left ventricle
c) The posterior wall of the right atrium
d) The atrioventricular bundle
e) The right auricle

23. The conducting system of the heart is composed of the following structures *except*:

a) The purkinje plexus
b) The deep cardiac plexus
c) The sinoatrial node
d) The atrioventricular bundle
e) The atrioventricular node

24. The following anatomic facts regarding the right coronary artery are true *except*:

a) It gives rise to a marginal branch
b) It passes forward between the right auricle and the pulmonary trunk
c) It gives rise to an anterior interventricular branch
d) It arises from the anterior aortic sinus
e) It descend in the right atrioventricular groove

25. During fetal life, the following facts regarding the circulatory system are true *except*:

a) The blood passing through the foramen ovale is more oxygenated than that passing through the right atrioventricular orifice
b) The direction of blood flow through the ductus arteriosus is from right to left
c) The ductus venosus permits blood to bypass the liver
d) The blood in the abdominal aorta is relatively more oxygenated than that in the internal carotid arteries
e) The valve of the inferior vena cava deflects blood toward the foramen ovale

26. In patients with the tetralogy of Fallot, there are four cardiac anomalies. Which of the following is characteristic of the condition?

a) Pulmonary stenosis with hypertrophy of the right ventricle
b) Large atrial septal defect
c) Hypertrophy of the left ventricle
d) Stenosis of the aorta
e) High blood pressure in the left ventricle

27. Pain arising in the heart is commonly referred to the following skin areas *except*:

a) Up into the neck and jaw
b) Down the medial side of the arm
c) The point of the shoulder
d) The epigastric area
e) Over the sternum

28. The following statements regarding structures in the intercostals spaces are correct *except:*

a) The anterior intercostals arteries of the upper six intercostals spaces are branches of the internal thoracic artery
b) The intercostals nerves travel forward in an intercostal space between the internal intercostal and innermost intercostals muscles
c) The intercostals blood vessels and nerves are posterior in the order of vein, nerve and artery from superior to inferior in a subcostal groove
d) The lower five intercostals nerves supply sensory innervation to the skin of the lateral thoracic and anterior abdominal walls
e) The posterior intercostals veins drain backward into the azygos and hemiazygous veins

29. The following statements concerning the diaphragm are correct *except:*

a) The right crus provides a muscular sling around the esophagus and possibly prevents regurgitation of stomach contents into the esophagus
b) On contraction, the diaphragm raises the intra-abdominal pressure and assists in the return of the venous blood to the right atrium of the heart
c) The level of the diaphragm is higher in the recumbent position than in the standing position
d) On contraction, the central tendon descends, reducing the intrathoracic pressure
e) The esophagus passes through the diaphragm at the level of the eighth thoracic vertebra

30. Which of the following statements is *incorrect* concerning the intercostals nerves?

a) They provide motor innervation to the peripheral parts of the diaphragm
b) The provide motor innervation to the intercostals muscles
c) They provide sensory innervation to the costal parietal pleura
d) They contain sympathetic fibres to innervate the vascular smooth muscle
e) The seventh to eleventh intercostals nerves provide sensory innervation to the parietal peritoneum

31. With a patient in the standing position, fluid in the left pleural cavity tends to gravitate down to the:

a) Oblique Fissure
b) Cardiac Notch
c) Costomediastinal Recess
d) Horizontal Fissure
e) Costodiaphragmatic Recess

32. To pass a needle into the pleural cavity in the midaxillary line, the following structures will have to be pierced *except* the:

a) Internal intercostal muscle
b) Levatores costarum
c) External intercostal muscle
d) Parietal pleura
e) Innermost intercostals muscle

33. The following statements concerning the thoracic outlet (anatomic inlet) are true *except*:

a) The manubrium sterni forms the anterior border
b) On each side, the lower trunk of the brachial plexus and the subclavian artery emerge through the inlet and pass laterally over the upper surface of the first rib
c) The body of the seventh cervical vertebra forms the posterior boundary
d) The first ribs form the lateral boundaries
e) The esophagus and trachea pass through the outlet

34. The following statements concerning the thoracic wall are correct *except:*

a) The trachea bifuricates opposite the manubriosternal joint (angle of Louis) in the midrespiratory position
b) The arch of the aorta lies behind the body of the sternum
c) The apex beat of the heart can normally be felt in the left intercostals space about 3.5 inch (9 cm) from the midline
d) The lower margin of the right lung on full inspiration could extend down in the midclavicular line to the eighth costal cartilage
e) All intercostals nerves are derived from the anterior rami of thoracic spinal nerves

35. All of the following commonly occur on inhalation *except*:

a) The diaphragm descends
b) The external intercostal muscles contract
c) The abdominal muscles contract and push the abdominal viscera cranially
d) The ribs are raised
e) The vertical dimension of the thoracic cavity increases

36. When passing a needle through the chest wall and into the pleural cavity in the midaxillary line, the following structures will be pierced *except*:

a) The external intercostal muscle
b) The skin
c) The parietal pleura
d) The levator costarum
e) The internal intercostals muscle

37. Hemiazygos vein receives the following veins:

a) Right superior intercostal
b) Left superior intercostal
c) Supreme (Highest) intercostal
d) All of the above
e) None of the above

38. On the neck of the first rib there are:

a) Stellate ganglion
b) First thoracic nerve
c) Superior intercostal vein
d) Both A and B
e) All of the above

39. On the plane between the sternal angle and lower border of T4 the:

a) First posterior intercostals vein opens into azygos vein
b) Oesophagus deviates to the left of the midline
c) Right main bronchus starts
d) Right recurrent laryngeal nerve recurves around ligamentum arteriosum
e) First costal cartilage joins the sternum

40. The oesophagus*:*

a) Is entirely supplied by the inferior thyroid artery
b) At cardiac orifice the epithelium is simple columnar
c) Transverses the left crus
d) Has a uniform lumen
e) Has striated muscle in the lower part

41. The left coronary artery has the following branches*:*

a) Circumflex
b) Marginal
c) Conus
d) S.A. Nodal
e) Interventricular

42. The coronary sinus receives the following veins, *except*:

a) Anterior cardiac
b) Middle cardiac
c) Small cardiac
d) Posterior vein of the left ventricle
e) Great cardiac

43. The left lung has:

a) Oesophageal groove
b) Cardiac Notch
c) Lingula
d) Both A and B
e) Both B and C

44. Regardig the thoracic wall:

a) The subcostal muscles are best developed in the upper part of the thorax
b) The innermost intercostal muscles are often regarded as pasts of the external intercostal muscles
c) The anterior intercostals membrane is the membranous portion of the internal intercostal muscle
d) The anterior intercostals arteries are branches of the internal thoracic arteries
e) The intercostals nerves at the posterior rami of the 12 thoracis nerves

45. The conducting system of the heart comprises:

a) The sinoatrial node, his bundle, right and left branches
b) The sinoatrial node, atrioventricular node, his and her bundle, superior and inferior crura
c) The atrioventricular node and atrial nodes, his bundle, right and left crura
d) The sinoatrial node, the atrioventricular node, and bundle, right and left branches, and purkinje fibers network
e) SA and AV node, his and her bundle, anterior and inferior crura, purkinje's fibers and network

46. The posterior mediastinum*:*

a) Extends from the 4^{th} thoracic vertebra to the diaphragm
b) Includes the descending thoracic aorta and azygos veins
c) Includes the vagi and splanchnic nerves
d) Includes the thoracic duct and oesophagus
e) All of the above

47. Select the one best answer:

a) The superior epigastric artery is a branch of external iliac artery
b) The anterior portion of the rectus sheath is formed by the aponeurosis of the external abdominal oblique and transverses abdominis muscle
c) The inguinal canal terminates at the superficial inguinal ring (a defect in the external abdominal oblique muscle)
d) The conjoint tendon consists of lower fibers of the external abdominal oblique muscle and the inguinal ligament
e) The internal spermatic fascia is derived from the internal oblique muscle

48. Regarding the skeleton of the thorax:

a) The floating ribs are ribs 8-12
b) A typical rib consists of all of the following: head, neck, a shaft with its costal groove
c) The most typical rib is rib 1
d) The sternal angle marks the articulation of rib 3
e) A line through the sternal angle bisects the disc between vertebra T2 and T3

49. The bronchial arteries arise from:

a) Thoracic aorta
b) Left subclavian
c) Internal thoracic
d) Arch of the aorta
e) 3rd intercostals artery

50. The arch of the aorta is crossed by*:*

a) Thoracic duct
b) Trachea
c) Right vagus
d) Left phrenic
e) Azygos vein

51. The intercostaobrachial nerve is the:

a) First intercostal
b) Second lateral cutaneous
c) Second intercostal
d) Medial pecotral
e) Medial cutaneous of the arm

52. The splanchnic nerves are:

a) Preganglionic parasympathetic
b) Postganglionic sympathetic
c) Preganglionic sympathetic
d) Relay in the sympathetic chain
e) Pass behind the diaphragm

53. The middle cardiac vein drains into:

a) Right atrium
b) Heart chambers
c) Coronary sinus
d) Great cardial vein
e) All of the above

54. The atrio-ventricular sulcus lodges:

a) Cardiac veins
b) Coronary sinus
c) Conus artery
d) SA Node
e) Marginal artery

55. The fibrous pericardium is attached directly to:

a) Serous pericardium
b) Manubrium of sternum
c) Central tendon of diaphragm
d) Pleura
e) Vertebral column

56. The base of the heart is formed by:

a) Left atrium
b) Ventricles
c) Right atrium
d) Left ventricle
e) Coronary sinus

57. The length of the left principal bronchus is:

a) 2 cm
b) 3 cm
c) 4 cm
d) 5 cm
e) 8 cm

58. The broncho-pulmonary segments are formed by:

a) Labor bronchi
b) Segmental bronchi
c) Pulmonary ducts
d) Alveolar sacs
e) All of the above

59. Which of the following statements concerning the thoracic wall is TRUE?

a) The intercostal muscles consist of four layers of muscles
b) The first rib articulates with the sternal angle
c) The sternum is made up of three bony parts: manubrium, body and xiphoid process
d) The internal thoracic vessels lie between the internal intercostals and the external intercostals muscles
e) The intercostal vein, artery and nerve run deep to the innermost intercostals muscles

60. Which statement about the mediastinum is TRUE:

a) The mediastinum is the space above the heart
b) The middle mediastinum contains the heart
c) The superior mediastinum contains the decending aorta
d) The inferior mediastinum contains the superior and inferior vena cave
e) The posterior mediastinum cotains the thymus gland, the sterno-pericardial ligaments and lymph gland

61. Which statement about the thoracic diaphragm is FALSE:

a) The diaphragm receives blood supply from a branch of the internal thoracic artery

b) The diaphragm receives blood supply from below via the inferior phrenic artery

c) The diaphragm receives autonomic innervation from C6-7

d) The diaphragm receives sensory innervation from the phrenic nerves

e) The diaphragm consists of a central tendon and a muscular periphery

62. In a patient with a tumor in superior mediastinum compressing the superior vena cava, all of the following veins would seve as alternate pathways for the blood to return to the right atrium, *except*:

a) Lateral thoracic vein

b) Internal thoracic vein

c) Hemiazygos vein

d) Vertebral venous plexus

63. In angina pectoris, the pain radiating down the left arm is mediated by increased activity in afferent (sensory) fibres contained in the:

a) Carotid branch of the glossopharyngeal nerve

b) Phrenic nerve

c) Vagus nerve and recurrent laryngeal nerve

d) Thoracic splanchnic nerve

64. A knife wound into the heart, at the level of the fifth left intercostals space, near the sternum, would penetrate all of the following layers *except*:

a) Fibrous pericardium

b) Serous visceral pericardium

c) Serous parietal pericardium

d) Visceral and parietal pleura

e) Pericardial cavity

65. A vertical oriented stab from a knife with a three inch blade leaves an entry wound at the root of the neck just above the right manubrio-clavicular joint. Which of the following possibilities should be considered:

a) A right pneumothorax

b) Damage to the right apex of the lung

c) Blood accumulating in the right pleural cavity

d) All of the above

e) None of the above

66. In an x-ray photograph, one sees an abnormal shadow in the left posterior mediastinum. It could arise from pathology of the:

a) Thymus

b) Left bronchus

c) Aortic arch

d) Azygos vein

e) Oesophagus

67. To remove blood from the pericardial sac without entering the pleural cavity. A syringe needle must be passed:

a) Immediately to the right of the sternum in the sixth intercostal space
b) Immediately to the left of the sternum in the sixth intercostal space
c) 2.5 cm to either side of the sternum in the sixth intercostal space
d) Between the xiphoid and the eighth costal cartilage
e) Between the fourth and fifth right intercostal space in the midclavicular line

68. Which of the following statements is INCORRECT of the trachea:

a) Lie in front of the oesophagus
b) Is formed of complete rings of hyaline cartilage
c) Is supplied by inferior thyroid artery
d) Recurrent laryngeal nerve never lies between it and the oesophagus
e) Is 10cm long

69. The following statements are true of the right principal bronchus *except*:

a) Wider and shorter than left
b) Enters the right lung opposite T5
c) Foreign bodies enter it more often than left
d) Gives rise to superior lobar bronchus after it enters right lung
e) Azygos vein arches over it

70. The oesophageal opening transmits the following *except*:

a) Vagal trunks
b) Oesophagus
c) Lymphatics
d) Oesophageal branches of left gastric artery
e) Oesophageal branches of right gastric artery

71. The diaphragm's blood supply is by following arteries:

a) Lower intercostal
b) Internal thoracic
c) Thoracic aorta
d) Abdominal aorta
e) All of the above

72. Pneumothorax can defined as presence of air in the pleural space, it can be caused accidently by the surgeon's knife when operating on:

a) The gall-bladder
b) The kidney
c) The duodenum
d) The small bowel
e) The pancreas

73. The intercostal neurovascular bundle is located:

a) Above the superior border of the ribs
b) Superficial to the ribs anteriorly
c) In the subcostal groove
d) Superficial to the anterior intercostal membrane
e) Between the external and internal intercostals muscles

74. Which of the following is true about the thoracic wall?

a) Each rib articulates with the transverse process of the vertebra above
b) The breast is usually bound firmly to the pectoralis major, allowing no movement
c) Most lymph from the breast drains axillary lymph nodes
d) The internal thoracic artery lies posterior to the transverses thoracis muscle
e) The intercostal nerve lies between the internal and external intercostals muscles

75. Which of the following statements is true?

a) The papillary muscle attaches to the cusps of the aortic valve via chorda
b) The right atrioventricular valve consists of two cusps
c) The aortic valve has a right coronary cusp, a left coronary and a posterior (non-coronary) cusp
d) The cusps of the heart valves are normally vascular but they may loose their blood supply as a result of disease such as rheumatic fever
e) An incompetent (defective) let left atrioventricular valve would allow blood to pass into the left lung during diastole

76. Which statement about the pleura is true?

a) Parietal pleura is innervated by the intercostals and phrenic nerves
b) Parietal pleura extends into the fissures of the lungs
c) The costodiaphragmatic recess is filled with lung tissue during heavy expiration
d) The pleura does not extend into the neck
e) Mediastinal pleura is innervated by the vagus nerve

77. The transverse pericardial sinus:

a) Is a diverticulum of the superior vena cava
b) Lies between the pulmonary veins
c) Lies between the major arteries leaving the heart and the major veins entering the heart
d) Contains the right coronary artery
e) Contains the ligamentum arteriosum

78. Which of the following statements is true?

a) The parietal pericardium and the visceral pericardium constitute the serous pericardium of the heart
b) The coronary vessels are found in the parietal pericardium
c) The parietal pericardium is fused with the central tendon of the diaphragm
d) The pericardial cavity is the cavity within the visceral pericardium that contains the heart
e) The epicardium consists of the myocardium and endocardium

79. Which of the following statements is true?

a) The coronary sinus receives blood from the anterior cardiac veins and returns it to the heart
b) Normally, the posterior interventricular artery comes from the right coronary artery
c) The anterior ventricular artery is usually a branch of the right coronary artery
d) The coronary arteries branch off the coronary sinus
e) The characteristic sounds heard during auscultation of the heart results from blood flowing through the cardiac veins and coronary arteries

80. Which of the following statements concerning the pleural cavities is TRUE?

a) The pleural cavity is a space filled with lung tissue
b) The space between the parietal pleura and endothoracic fascia is often referred to as pleural recess
c) Parietal pleura is the same as the endothoracic fascia
d) The pulmonary ligaments consist of pleura
e) All of the pleural sac is sensitive to pain

81. Referred visceral pain is one of the common problems of the thoracic viscera. Pain felt at the tip of the shoulder referred from diaphragmic peritoneum is due to:

a) The tip of the shoulder is innervated by C4
b) Sensation from this peritoneum is conveyed by splanchnic nerves
c) The common vascular sympathetic plexus between the two areas
d) Embryological origin of the peritoneum at the tip of the shoulder

82. A patient presents after a road traffic accident with tenderness over the rib which is level with the inferior angle of the right scapula:

a) The sixth
b) The seventh
c) The eight
d) The ninth

83. Concerning the intercostals neurovascular bundle, all the following statements are true *except*:

a) They run in the plane between the middle and the innermost layers of muscles
b) The 10^{th} nerve is sensory to the skin at level of the umbilicus
c) The 11^{th} nerve is sensory to the skin at level of suprapubic region
d) There are 11 intercostal vessels and nerves and a subcostal vessel and nerve

84. The intercostobrachial nerve is the:

a) Lateral cutaneous branch of the 2^{nd} intercostal nerve
b) Collateral branch of the 2^{nd} intercostal nerve
c) Anterior cutaneous branch of the 3^{rd} intercostal nerve
d) Posterior cutaneous branch of the 1^{st} intercostal nerve

85. Select the incorrect statement about the esophagus:

a) Traverses the left diaphragmatic crus
b) Has striated muscle in its upper part
c) Is supplied by inferior thyroid artery
d) Is lined by stratified squamous epithelium
e) Is 25 cm

86. Azygos vein receives the following veins *except*:

a) Bronchial veins
b) Esophageal veins
c) Left superior intercostals vein
d) Lower posterior intercostals vein
e) Hemiazygos vein

87. The phrenic nerve:

a) Contains axons that originate for the most part from the central ramus of C4
b) Provides sensory innervation to the pericardium
c) Both A and B
d) Neither A nor B

88. Structures of areas common to the right ventricle:

a) Fossa ovalis
b) Musculi pectinati
c) Both A and B
d) Neither A nor B

89. The posterior intercostals arteries are branches of:

a) The internal thoracic artery
b) The subclavian artery
c) The aorta
d) The highest intercostal artery
e) The bronchi connective tissue and visceral pleura of the lungs are supplied by the bronchial arteries

90. Which of the following fissures of the lungs lies directly beneath the anterior portion of the 4^{th} rib:

a) The right horizontal fissure
b) The left horizontal fissure
c) The right oblique fissure
d) The left oblique fissure

91. An aneurysm (ballooning) of the arch of the aorta would most affect all except one of the following :

a) Left primary bronchus
b) Esophagus
c) Left recurrent laryngeal nerve
d) Thoracic duct
e) Phrenic nerve

92. The anterior intercostal arteries are branches of the:

a) Posterior intercostals arteries
b) Internal thoracic arteries
c) Mediastinal arteries
d) Highest intercostal
e) Subcostal arteries

93. The bare area of the heart or pericardium where the pleura does not cover it is related to the:

a) Costodiaphragmatic recess
b) Cupola of the pleura
c) The right 4^{th}-6^{th} parasternal region
d) The left 4^{th}-6^{th} parasternal region
e) Pulmonary ligament

94. Which of the following features is NOT part of a typical thoracic vertebra:

a) Foramen transversarium
b) Transverse process
c) Lamina
d) Spinous process
e) Heart-shaped body

95. Imagine a knife passing through the thoracic wall into the lung through an intercostals space. From superficial to deep, which is the correct order of layers (not all layers will be listed):

a) External intercostals m., endothoracic fascia, internal intercostals m., parietal pleura
b) External intercostals m., innermost intercostals m., parietal pleura, visceral pleura
c) Internal intercostals m., endothoracic fascia, pleural cavity, parietal pleura
d) Endothoracic fascia, internal intercostals m., visceral pleura, pleural cavity
e) External intercostals m., innermost intercostals m., pleural cavity, endothoracic fascia

96. Which of the following does not travel in a thoracic ventral ramus?

a) Somatic motor fibers
b) Somatic sensory fibers
c) Preganglionic sympathetic fibers
d) Postganglionic sympathetic fibers
e) Parasympathetic fibers

97. Which of the following pathways is correct for the passage of arterial blood from the heart to the 4th anterior intercostals artery?

a) Axillary a. to thoracoacromial trunk to anterior intercostals a.
b) Subclavian a. to superior epigastric a. to anterior intercostals a.
c) Brachiocephalic trunk to common carotid a. to internal thoracic a. to anterior intercostals a.
d) Subclavian a. to internal thoracic a. to anterior intercostals a.
e) Subclavian a. to axillary a. to internal thoracic a. to anterior intercostals a.

98. Which of the following statements regarding the lungs is false?

a) They right lung has three lobes
b) The impression for the aorta is found on the mediastinal surface of the left lung
c) The cupula of an inflated lung rises above the level of the clavicle
d) The right main bronchus is shorter, wider and more vertical than the left main bronchus
e) The right lung is divided into eight bronchopulmonary segments

99. Which of the following statements regarding the pleura is false?

a) The visceral pleura is continuous with the parietal pleura at the root of the lung
b) In the costodiaphragmatic recess, costal parietal pleura is in contact with diaphragmatic parietal pleura
c) Visceral pleura is extermly sensitive to pain
d) Parietal pleura is divided into costal, diaphragmatic, mediastinal and cervical parts
e) The pleural cavity lies between the visceral and parietal layers of pleura and contains serous fluid

100. Which of the following statements regarding the relationships in the thorax is false?

a) The phrenic nerve runs posterior to the root (hilum) of the lung
b) The left vagus nerve becomes the anterior vagal trunk
c) The intercostals neurovascular bundle, from superior to inferior, contains the intercostals vein, artery and nerve
d) The esophageal hiatus lies anterior to the aortic hiatus in the diaphragm
e) The transverse pericardial sinus lies posterior to the great arteries of the heart

101. Which of the following statements is true?

a) The pulmonary circulations starts with the right atrium and ends with the left atrium
b) The pulmonary circulation starts with the right ventricle and ends with the left atrium
c) The systemic circulation (to the body) starts with the right ventricle and ends with the left ventricle
d) The systemic circulation starts with the left atrium and ends with the right ventricle
e) The systemic circulation starts with the right atrium and ends with the right ventricle

102. Which one of the following statements about the pericardium is false?

a) The pericardium has a fibrous, inelastic outer layer
b) The pericardium has a parietal and visceral layer that secretes fluid
c) The coronary vessels are found in the visceral pericardium (epicardium)
d) The pericardial reflections are where the pericardium is fused to the diaphragm
e) The roots of the great vessels are surrounded by fibrous pericardium

103. Which statement about the coronary arteries is false?

a) The posterior interventricular artery is often a branch of the right coronary artery, but it may branch from the left coronary artery in some individuals
b) The heart normally has two coronary arteries that emerge from the descending aorta
c) Coronary arteries receive sympathetic innervation
d) Coronary arteries receive parasympathetic innervation
e) The heart occupies less than 1/2% of body weight but it uses 4% of the blood pumped to the body

104. Which statement about cardiac veins is true?

a) The middle cardiac vein runs with the marginal branch of the right coronary artery
b) Blood from the anterior cardiac veins return directly to the right atrium without passing through the coronary sinus
c) The great cardiac vein is found in the anterior atrioventricular sulcus
d) The coronary sinus is on the anterior surface of the heart
e) All Thebesian veins empty into the right atrium

105. Which statement about the chambers of the heart is true?

a) The moderator band (septomarginal trabecula) is found in the left ventricle
b) The fossa ovalis is seen in the right atrium
c) The mitral (bicuspid) valve is seen in the right ventricle
d) The semilunar valves are seen in the left and right atria
e) The pectinate muscles are seen in the left and right ventricles

106. Which statement concerning the pulmonary veins is false:

a) In the hilum of the lung, they tend to lie inferior to the pulmonary arteries
b) They drain blood into the right atrium
c) Their branches in the lungs generally lie between bronchopulmonary segments
d) They are innervated by autonomic nerves
e) They carry oxygenated blood

107. The lungs receive their blood supply from:

a) Pulmonary arteries
b) Bronchial arteries
c) Circumflex arteries
d) Coronary arteries
e) Pulmonary veins

108. In comparison to the right lung, the left lung:

a) Has no pleura surrounding it
b) Has one fewer lobe and is smaller
c) Has one fewer lobe and is larger
d) Has one more lobe and is smaller
e) Has one more lobe and is larger

109. Which statement is false about the intercostals nerves:

a) They can be found inferior to an intercostals artery in the intercostals space
b) They run between the internal and innermost intercostal muscles
c) They are ventral rami of thoracic spinal nerves
d) They innervate the intercostals muscles as well as the overlying pectoral muscles
e) The second intercostals nerve (T2) normally gives off the intercostals nerve

110. Which of the following structures does (do) not open into the right atrium?

a) Coronary sinus
b) Anterior cardiac veins
c) Pulmonary veins
d) Inferior vena cava
e) Thebesian veins

111. The internal thoracic artery gives the following branches except:

a) Pericardiophrenic
b) 2nd anterior intercostal
c) Superior epigastria
d) Muculophrenic
e) Bronchial artery

112. The following veins are tributaries of the coronary sinus *except*:

a) Great cardiac
b) Small cardiac
c) Anterior cardiac
d) Middle cardiac
e) Oblique vein of left atrium

113. Middle cardiac vein is located at the:

a) Anterior interventricular sulcus
b) Posterior interventricular sulcus
c) Posterior AV groove
d) Anterior AV groove
e) Right margin of the heart

114. Which of the following statements about the spinal nerves is true?

a) Spinal nerve T4 has a white and a gray ramus communicans
b) Spinal nerve T1 exits the vertebral column between the vertebra C7 and T1
c) The greater splanchnic nerve contains preganglionic sympathetic fibers
d) Intercostal nerves lie between the external and internal intercostals muscles
e) The stellate ganglion is the somatic sensory ganglion of T1

115. Which of the following is false about the heart's innervation?

a) Sympathetic nerve impulses dilate the coronary arteries and increase the force of contraction of cardiac muscle
b) Visceral sensory fibers traveling with the sympathetic nerves carry sensation from the heart muscle
c) Sympathetic innervation to the heart originates in regions T5-T12 of the spinal cord
d) The phrenic nerve passes close to the heart but does not innervate cardiac muscle
e) Parasympathetic innervation in the cardiac plexus comes from the vagus nerve

116. Regarding the ligaments of the vertebral column, which of the following is false?

a) Interspinous ligaments connect adjacent spinous processes
b) Ligamenta flava connect the transverse processes of adjacent vertebra
c) The anterior longitudinal ligament interconnects vertebral bodies
d) The intervertebral disc is filled with fibrogelatinous pulp, the nucleus pulposus
e) The ligamentum nuchae attaches to spinous processes of cervical vertebrae

117. Which statement about the lungs is false:

a) The right lung has ten segments
b) The left lung has ten segments
c) The cardiac notch is a feature of the left lung
d) The lingual is a feature of the right lung
e) Both lungs have an oblique fissure

118. Which of the following is true of the azygos vein?

a) It lies close to the intercostal veins but does not connect directly with them
b) It lies on the left side of the thorax
c) It is normally part of the portal system of venous drainage
d) It empties into the superior vena cava
e) It is typically smaller than the hemiazygos vein

119. The Coronary Sinus is found in the:

a) Posterior atrioventricular groove
b) Anterior interventricular groove
c) Posterior interventricular groove
d) Anterior atrioventricular groove
e) Sulcus terminalis

120. Which of the following statements about the thoracic diaphragm is true?

a) The esophagus enters the abdominal cavity posterior to the median arcuate ligament
b) The esophageal hiatus is at vertebral level T10
c) The diaphragm relaxes during inspiration
d) The left crus of the diaphragm is longer than the right crus
e) The left dome of the diaphragm is usually higher than the right dome

121. Pectoralis minor:

a) Inserts on the coracoid process of the scapula
b) Is innervated by the lateral pectoral nerve only
c) Flexes the arm
d) Lies superficial to pectoralis major
e) Forms the inferior border of the deltopectoral triangle

122. The left lung has:

a) Oesophageal groove
b) Cardiac Notch
c) Lingula
d) Posterior vein of the left ventricle
e) Great cardiac

123. The pleural sac:

a) Is pierced only by fibers of the vagus nerve
b) Has a portion known as diaphragmatic pleura which is a subdivision of the visceral pleura
c) Has a cervical extension called the pleural cupola
d) Forms a costodiaphragmatic recess on the left side only
e) Is completely insensitive to pain

124. Which of the following is false of the circulation of the thoracic wall:

a) Blood supply to the upper anterior thoracic wall comes from the thoracoacromial artery
b) Blood from the anteriormost aspect of the thoracic wall drains into the internal thoracic vein
c) Unlike the intercostals arteries, posterior intercostals veins do not anastomose with the anterior intercostals veins
d) The posterior intercostal arteries are branches of the descending aorta
e) The internal thoracic artery branches into the musculophrenic and the superior epigastric as it approaches the diaphragm

125. Which of the following statements is true?

a) Somatic sensory fibers are supplied to the pericardium by the phrenic nerves
b) The cardiac plexus of nerves contains only preganglionic sympathetic nerves
c) The vagus nerve supplies postganglionic sympathetic branches to the heart
d) The sympathetic nerves to the heart slow down the heart rate
e) The parasympathetic nerves to the heart speed-up the heart rate

126. Which of the following statements is true?

a) The aortic valve contains two cusps, an anterior and posterior cusp
b) The valve on the pulmonary trunk contains three cusps, a right coronary cusp, a left coronary cusp and a posterior non-coronary cusp
c) The right atrioventricular valve has three cusps
d) The left atrioventricular valve has three cusps
e) The valve of the inferior vena cava contains two cusps

127. Which statement is true about the coronary arteries?

a) They are the third pair of branches off of the aorta
b) They supply blood to the parietal pericardium
c) The right coronary artery normally has two main branches: the marginal artery and the posterior interventicular
d) The left coronary artery normally has only one main branch: the left anterior descending artery
e) The internal thoracic artery anastomoses with the coronary arteries which supply the heart

128. Which statement about the heart is true?

a) Systemic circulation begins at the left ventricle and ends at the right atrium
b) The pulmonary circulation begins at the right ventricle and ends at the right atrium
c) The sinuatrial node is located in the interventricular septum
d) The septomarginal trabeculum is in the left ventricle
e) The pectinate muscles (musculi pectinati) are in the left and right ventricles

129. The main blood supply to lung tissue comes from:

a) Pulmonary arteries
b) Pulmonary veins
c) Thebesian veins
d) Bronchial veins
e) Bronchial arteries

130. The right lung:

a) Has two lobes
b) Has 11 bronchopulmonary segments
c) Usually has a groove for the right brachiocephalic vein
d) Usually exhibits a groove for the descending aorta
e) Has a prominent cardiac notch

131. Which is the correct pathway of blood-flow through the heart:

a) Right atrium, left atrium, right ventricle, left ventricle, aorta
b) Right atrium, right ventricle, left atrium, left ventricle, aorta
c) Vena cava, right atrium, left atrium, right ventricle, left ventricle, aorta
d) Vena cava, left atrium, pulmonary trunk, right atrium, left ventricle, aorta
e) Lungs, pulmonary trunk, left atrium, left ventricle, aorta

132. Which statement is true?

a) The esophagus pierces the diaphragm at the level of T8
b) The diaphragm attaches to the posterior aspect of the sternum at the level of the sternal angle
c) The central tendon of the diaphragm is fused with the serous pericardium just beneath the heart
d) When the diaphragm contracts is moves inferiorly, decreasing intrathoracic pressure, resulting in air being taken into the lungs
e) The diaphragm, by changing pressure in the thorax and abdomen prevents blood from returning to the heart

133. The arch of the aorta is crossed by the following structures *except*:

a) Left phrenic nerve
b) Left vagus nerve
c) Left superior intercostal vein
d) Left main bronchus
e) Left brachiocephalic vein

134. Which of the following statements about the conduction system of the heart is false?

a) The SA (sinuatrial) node is the "pacemaker" of the heart
b) The SA node is supplied by the sympathetic and parasympathetic nerves
c) The AV (atrioventricular) node receives impulses from the SA node
d) Impulses from the AV node travel to the AV bundle
e) The AV node is located at the base of the anterior papillary muscle

135. Which of the following structures pass behind the medial arcute ligament of the diaphragm?

a) Subcostal nerve
b) Right phrenic nerve
c) Sympathetic chain
d) Epigastric artery
e) Vagal trunks

136. Which statement about the vertebrae is true?

a) 4 sacral vertebrae fuse to form the sacrum
b) Spinous processes of vertebrae project laterally from the vertebral arches
c) All vertebrae have foramina in their transverse processes
d) The first cervical vertebra has no body
e) The size of the vertebral bodies decreases from superior to inferior

137. Which of the following is not at the same level as the sternal angle?

a) The disc between vertebra T4 and T5
b) The attachment of the costal cartilage of rib 2
c) The horizontal fissure of the right lung
d) The bifurication of the trachea into primary bronchi
e) The arch of the aorta

138. The thoracic duct is primarily responsible for:

a) Passing lymph through the thorax to the subclavian or brachiocephalic vein
b) Shunting blood between the aorta and pulmonary trunk in fetal circulation
c) Transferring blood between the right atrium and left atrium
d) Draining blood from the intercostal spaces
e) Connecting the right and left lungs

139. Azygos vein receives the following veins *except*:

a) Bronchial veins
b) Esophageal veins
c) Left superior intercostals vein
d) Lower posterior intercostal vein
e) Hemiazygos vein

140. On the plane between the sternal angle and lower border of T4:

a) Azygos vein enters the superior vena cava
b) Thoracic duct reaches the left side of the esophagus
c) Aortic arch starts and ends
d) All of the above