Раздел: **Current boundary control according to sections 2-4.**
Модуль: **Топографическая анатомия и оперативная хирургия**
Тема: **Current boundary control according to sections 2-4.**

1. The discrepancy between the upper border of the chest wall and the chest cavity is that:

1) ☐ the liver, stomach, spleen, kidneys are projected onto the chest wall
2) ☑ part of the chest cavity is located in the neck
3) ☑ the upper thoracic aperture is the upper border of the chest wall, and the dome of the pleura and the apex of the lung are 2-3 cm above the clavicle
4) ☑ posterior pleura and the apex of the lung correspond to the level of the spinous process of the VII cervical-I thoracic vertebra
5) ☐ the subclavian artery and vein are adjacent to the dome of the pleura

2. The difference between the lower border of the chest cavity and the chest wall is that:

1) ☑ the lower border of the thoracic cavity is shifted upwards due to the high standing of the diaphragm
2) ☑ the right dome of the diaphragm corresponds to the IV rib along the midclavicular line
3) ☑ some organs of the upper abdominal cavity (liver, stomach, spleen, kidneys) are projected onto the chest wall
4) ☑ the left dome of the diaphragm is at the level of the V rib along the midclavicular line
5) ☐ the lower borders of the chest wall and thoracic cavity correspond to the Apertura thoracis superior

3. According to the linea axillaris anterior, the intercostal fissure (intercostal canal), with the intercostal vascular-nerve bundle located, is limited by:

1) ☑ rib furrow (top)
2) ☐ musculus serratus anterior (front)
3) ☑ external intercostal muscle (front)
4) ☑ internal intercostal muscle (from behind)

5) ☐ musculus latissimus dorsi (from behind)

4. In case of fractures of the lower ribs, the parenchymal organs of the abdominal cavity can be damaged:

1) ☑ liver (right)

2) ☐ duodenum

3) ☑ spleen (left)

4) ☑ kidney and adrenal gland

5) ☐ ureter

5. The mammary gland is characterized by a close relationship with the superficial fascia of the breast:

1) ☑ the superficial fascia, splitting into two plates, forms the capsule of the organ

2) ☑ separate fibrous bundles starting from the clavicle and thoracic fascia and intertwining with the thickness of adipose and connective tissue along the posterior surface of the gland make up lig. suspensoria mammaria

3) ☑ the spurs of the superficial fascia divide the organ into lobes

4) ☐ between the superficial fascia and the propria fascia of the breast there is a retromammary space

5) ☐ connective tissue septa are directed from the anterior surface of the gland to the skin

6. The mammary gland has the following general structural plan:

1) ☑ the body of the gland; It is formed by 15-20 radially located lobes surrounded by adipose tissue

2) ☐ the mammary gland is separated from the breast's own fascia by a retromammary space

3) ☑ the lobe consists of lobules that open into the milk duct

4) ☑ the lactiferous duct forms the lactiferous sinus before entering the nipple

5) ☑ the terminal narrowed part of the milk duct opens at the apex of the nipple with the milk opening (some ducts merge, the number of milk holes is from 8 to 15)

7. Changes in the shape and size of a woman's mammary gland are determined by:

1)	☑	age
2)	☑	functional state of the organ (pregnancy, lactation)
3)	☑	the volume of layers of adipose tissue penetrated by bundles of fibrous connective tissue (interstitium)
4)	☑	localization of pathological processes: mastitis, fibrocystic mastopathy, benign or malignant tumors
5)	☐	enlarged lymph nodes in the axillary region

8. Lymph outflow from the mammary gland is provided by lymphatic networks:

1)	☑	superficial, formed by the lymphatic vessels of the skin
2)	☐	axillary lymph nodes
3)	☐	deep lateral cervical lymph nodes
4)	☑	a deep network represented by the lymphatic vessels of the body (parenchyma) of the gland
5)	☐	peristernal lymph nodes and anterior mediastinal nodes

9. With metastasis of breast cancer, a "skin path" appears early due to the fact that:

1)	☑	deep lymphatic vessels are widely anastomosed with superficial ones
2)	☑	in the presence of a tumor node, atypical lymphatic outflow pathways develop
3)	☐	infiltration of the lymphatic vessels of the skin by malignant cells – the "skin path" of metastases indicates the prevalence of the malignant process
4)	☐	breast cancer does not metastasize lymphogenically
5)	☐	malignant cells are transported hematogenously (through the veins)

10. The lymph node of Zorgius (or several nodes from the group of medial nodes) is located at the intersection of:

1)	☐	clavicle
2)	☐	middle clavicular line
3)	☑	of the lower edge of the pectoralis major muscle
4)	☐	pectoralis minor
5)	☑	III ribs

11. Possible localizations of breast cancer metastases by lymphogenic pathway:

1)	☑	axillary (all five groups, apical lymph nodes were called subclavian according to BNA)
2)	☐	deep elbow lymph nodes
3)	☑	deep lateral cervical lymph nodes (according to BNA - supraclavicular)
4)	☑	peristernal nodes and mediastinal nodes
5)	☑	axillary lymph nodes of the opposite side (contralateral metastasis)

12. In the presence of a tumor node in the mammary gland and a complaint of pain in the cervical and upper thoracic spinal column, metastases in the spine that have spread through the veins should be suspected:

1)	☐	the 3rd-7th upper posterior intercostal veins are connected to the anterior intercostal veins
2)	☑	with the development of a malignant tumor, there are atypical pathways of blood outflow from the mammary gland
3)	☑	part of the outflow of blood from the mammary gland occurs into the posterior intercostal veins
4)	☑	the intervertebral vein flows into each of the posterior intercostal veins
5)	☑	the intervertebral vein is formed from the veins of the external and internal vertebral plexuses

13. The arteries of the chest wall involved in collateral circulation in occlusion of the abdominal part of the aorta are:

1) ☐ lateral thoracic

2) ☐ bronchial branches of the thoracic part of the aorta

3) ☑ internal thoracic

4) ☑ superior epigastric

5) ☑ intercostal

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14. The "weak" areas of the triangular diaphragm, where the thoraco-abdominal barrier is formed by the junction of the intrathoracic and intra-abdominal fascia, include:

1) ☐ esophageal opening

2) ☑ right sternocostal triangle (Morgagni fissure)

3) ☑ right lumbar-costal triangle (right Bochdalek fissure)

4) ☑ left lumbar-costal triangle (left Bochdalek fissure)

5) ☑ left sternocostal triangle (Larrey's fissure)

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15. In the "weak" areas of the diaphragm, the following pathological processes can take place:

1) ☐ abdominal aortic aneurysm

2) ☑ rupture of the retroperitoneal abcess into the subpleural space of the thoracic cavity

3) ☑ diaphragmatic hernia

4) ☑ abscess spread from the subpleural space to the retroperitoneal space

5) ☐ pleural empyema

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16. The passage of the inferior vena cava in the opening of the diaphragm explains the following vascular phenomena:

1) ☑ the contraction of the diaphragm promotes the outflow of blood from the subphrenic region of V. cava inferior

to the right atrium ("pulsation" of the vein)

2) ☑ the pressure in the thoracic and abdominal cavities changes

3) ☑ when inhaling at the level of the diaphragm, there is compression and bending of the inferior vena cava (extra-organ "valve")

4) ☐ formation of diaphragmatic hernias

5) ☑ in chronic nonspecific lung disease, due to a significant increase in the sagittal and transversal size of the chest, there is a flattening of the diaphragm, with gross hemodynamic disorders of blood flow according to V. cava inferior

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17. The anatomical and functional differences of the pleural sheets are as follows:

1) ☐ between the pleural sheets, a pleural cavity is formed, in the recesses of which pathological fluid accumulates

2) ☑ the visceral pleura is firmly connected to the lung parenchyma, the parietal pleura is loose (by means of a subserosal base)

3) ☑ the visceral pleura produces serous fluid, the parietal pleura resorbs

4) ☑ pleural sheets have plasticity - the property of forming adhesions

5) ☑ the parietal pleura receives rich sensory innervation, the visceral pleura is innervated by the nerves of the lung

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18. When mobilizing the apex of the lung, large blood vessels can be damaged:

1) ☐ brachiocephalic trunk

2) ☑ subclavian vein

3) ☐ left brachiocephalic vein

4) ☑ subclavian artery

5) ☐ superior vena cava

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19. The pleural cavity has the following indentations or sinuses:

1) ☐ pleural dome

2) ☑ costo-diaphragmatic (according to the linea axillaris media, 6-8 cm deep)

3) ☑ costomediastinal

4) ☐ oblique sinus of the pericardium

5) ☑ diaphragmatic-mediastinal

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20. The main localizations of breast abscesses:

1) ☑ in the subcutaneous tissue – pre- or anthemammammary abscess

2) ☐ phlegmon of the superficial subpectoral space

3) ☑ in the parenchyma of the gland – interstitial and parenchymal mastitis

4) ☐ cellulitis of the deep subpectoral space

5) ☑ in the retromammary space (retromammary abscess)

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21. To open purulent mastitis and retromammary abscess, incisions are used:

1) ☑ linear radial – from the halo to the periphery, according to Angerer

2) ☑ semicircular – along the skin fold of the base of the mammary gland, according to Bardengeier

3) ☑ along the lower edge of the pectoralis major muscle

4) ☑ semicircular along the areola border

5) ☐ horizontal at the level of the III rib

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22. Linear radial incisions for purulent mastitis have disadvantages:

1) ☑ do not meet the requirements of cosmeticism

2) ☑ provoke cicatricial deformation of the organ

3) ☐ characterized by significant blood loss

4) ☑ the need for a compression bandage with an elevated position of the organ

5) ☑ in acute purulent infiltration of the gland, 3-4 linear incisions are used

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23. Indications for sectoral resection of the breast:

1) ☑ benign tumor

2) ☐ cystic fibrous mastopathy

3) ☑ retention cyst

4) ☐ acute purulent mastitis

5) ☐ retromammary cellulitis

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24. Stages of sectoral resection of the breast:

1) ☑ skin incision bordering the nodule, followed by separation of the skin and subcutaneous base

2) ☑ within healthy tissues, one or more lobules are excised in the form of a wedge along the interlobular septa

3) ☑ provide thorough hemostasis; The walls of the cavity are connected with catgut sutures

4) ☑ the wound is drained with a strip of glove rubber for 1-2 days and skin sutures are applied

5) ☐ the wound is sutured tightly

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25. Puncture of the pleural cavity in hydrothorax is performed in the following position of the patient:

1) ☑ sitting on the dressing table

2) ☑ the torso leans forward

3) ☑ the hand on the side of the puncture is raised

4) ☐ the upper part of the body is deflected posteriorly

5) ☐ the patient is in a horizontal position

26. In order to remove pathological fluid, a puncture of the pleural cavity is carried out, focusing on:

1) ☐ X-XII rib
2) ☑ Upper edge of the rib
3) ☑ VII-VIII rib
4) ☑ between the middle axillary and scapular lines
5) ☐ along the midclavicular line

27. External landmarks of pleural cavity puncture in pneumothorax are:

1) ☐ I rib
2) ☐ middle axillary line
3) ☑ II-III rib
4) ☑ middle clavicular line
5) ☐ V rib

28. Possible complications of pleural puncture include:

1) ☑ pneumothorax
2) ☑ lung injury
3) ☑ intercostal nerve needle cut injury
4) ☐ transverse colon puncture
5) ☑ liver injury (right), spleen (left)

29. Indications for rib resection:

1)	☐	rib fracture
2)	☑	osteomyelitis
3)	☑	туберкулез ребра
4)	☑	excision of healthy ribs to expand surgical access to the chest cavity
5)	☑	correction of chest deformities or use of a rib for free bone grafting

30. Stages of subperiosteal resection of the rib during thoracotomy:

1)	☑	soft tissues are dissected along the rib, periosteum along the middle of the rib, and at the ends of the incision – across
2)	☑	the periosteum is separated from the rib with the preservation of the intercostal neurovascular bundle
3)	☑	the rib along the edges of the separated periosteum is dissected with wire cutters (in children - with scissors)
4)	☐	the remaining layers of the intercostal space are dissected layer by layer
5)	☐	the rib is resected together with the periosteum

31. Penetrating wounds of the chest wall are complicated by:

1)	☐	adhesions in the pleural cavity
2)	☑	the development of pleuro-pulmonary shock
3)	☑	pneumothorax and its consequence - pulmonary atelectasis
4)	☑	hemothorax - bleeding into the pleural cavity
5)	☑	infection of the pleural cavity

32. Types of pneumothorax:

1) ☑ open - communication of the pleural cavity with atmospheric air through a defect in the chest wall

2) ☐ pulmonary atelectasis

3) ☑ closed - a consequence of a closed lung injury with the integrity of the chest wall or the absence of gaping of its wound

4) ☐ adhesions in the area of the base of the lung

5) ☑ valvular – for wounds of the chest wall and closed lung injuries, when the damaged tissues, like a valve, allow air to pass only into the pleural cavity; With each breath, the compression of the lung increases

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33. Surgery for an open pneumothorax includes:

1) ☐ dissection in the neck of N. phrenicus on the side of surgical intervention

2) ☑ excision of wound edges within healthy areas

3) ☑ revision of the lung and pleural cavity with thorough hemostasis

4) ☑ elimination of gaping wound of the chest wall

5) ☑ drainage of the pleural cavity

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34. The wound of the chest wall with an open pneumothorax is sutured with sutures:

1) ☐ pleural

2) ☑ pleuromuscular

3) ☑ muscular-fascial

4) ☑ cutaneous (with a subcutaneous base)

5) ☐ muscle

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35. Drainage of the pleural cavity during suturing of an open pneumothorax is dictated by the need to:

1) ☑ removal of the remaining air in the pleural cavity to straighten the lung

2) ☑ early diagnosis of possible complications due to errors in the technique of closure of the wound of the lung and chest wall (solving the issue of rethoracotomy)

3) ☑ evacuation of pathological fluid (exudate) from the pleural cavity

4) ☐ stimulation of the formation of adhesions in the surgical area

5) ☐ injection of an antibiotic into the pleural cavity

36. The lung has the following surfaces:

1) ☑ Diaphragmatic

2) ☐ Top

3) ☑ Costal

4) ☑ Mediastinal

5) ☐ Vertebral part of the costal surface

37. The edges of the lung separate the surfaces of the organ:

1) ☑ anterior – costal from mediastinal (medial)

2) ☑ the lower one is costal and mediastinal from the diaphragmatic

3) ☑ the lower edge is the costal edge from the diaphragmatic

4) ☐ anterior edge – costal from diaphragmatic

5) ☐ the lower edge from the hilar of the lung

38. The oblique fissure of the lung from the level of the spinous process of the III thoracic vertebra is directed:

1) ☑ downward and anteriorly along the costal surface to the lower edge near its transition to the anterior edge

2) ☑ accordingly, the border of the bony and cartilaginous parts of the VI rib

3)	☑	upwards and posteriorly to the mediastinal surface and to the hilum of the lung
4)	☐	the oblique fissure divides the lung into two separate parts in front and behind, connecting in the area of the gate - the upper and lower lobes
5)	☐	oblique cleft is not pronounced

39. The horizontal slit of the right lung (the left lung does not have it) is located as follows:

1)	☑	it begins on the costal surface
2)	☑	in the middle of the oblique slit at the intersection with the middle axillary line
3)	☑	it is directed almost horizontally anteriorly (at the level of the IV rib) to the anterior edge of the lung
4)	☐	the horizontal slit is pronounced
5)	☑	it passes to the mediastinal surface and reaches the hilum of the lung, it is directed to the hilum of the lung at the level of the VI rib

40. The main components of the root of the right lung have the following syntopy:

1)	☑	syntopy is defined by the abbreviation "BAV"
2)	☑	the main bronchus is located upwards and posteriorly
3)	☐	the pulmonary artery is located posterior to the bronchus
4)	☑	pulmonary artery – anterior and downward from the bronchus
5)	☑	pulmonary veins – anterior and downward from the pulmonary artery

41. In the left lung, the main bronchus and pulmonary vessels are located under the abbreviation "ABV":

1)	☑	pulmonary artery upwards and anterior to the bronchus
2)	☑	bronchus – downward and posterior to the pulmonary artery
3)	☐	bronchus posterior and upward from the artery

4) ☑ pulmonary veins below and anterior to the main bronchus

5) ☐ pulmonary veins upward and posterior to the bronchus

42. In the root of the lung, the main bronchus, pulmonary artery and veins are accompanied by loose fibrous connective tissue:

1) ☐ prepleural tissue

2) ☑ the parabronchial space is Marshall's fascial-cellular sheath containing bronchial branches, lymphatic vessels, nodes, and nerves of the lung

3) ☑ paravasal space

4) ☐ marshall's sheath is a route of air spread and infection in bronchial ruptures and fistulas

5) ☐ cicatricial changes in the paravasal space make it difficult to mobilize pulmonary vessels at the root of the lung

43. In relation to the pericardium, the pulmonary vessels (artery, superior and inferior veins) have the following sections:

1) ☑ extrapericardial

2) ☐ ostial portions of the pulmonary veins

3) ☐ intraligamentous

4) ☑ intrapericardial

5) ☐ extraligamentous

44. The lung lobe is characterized by the following signs:

1) ☑ it is delimited from the other lobe by the interlobular sulcus

2) ☑ it is ventilated by the lobar bronchus (II order)

3) ☑ functional blood supply (small circulation) is provided by the lobar artery and vein (II order)

4) ☑ trophic blood supply to the bronchi occurs through the bronchial branches of the thoracic part of the aorta

5) ☐ a share has no external boundaries

45. Signs characterizing the lung segment:

1) ☑ part of the lobe delimited from other segments by connective tissue layers

2) ☑ the segment border corresponds to the "low-vessel" zone

3) ☑ it has the form of a pyramid, the base of which is directed to the surface of the pulmonary pleura, the apex to the hilum of the lung

4) ☑ at the top of the segment is the "pedicle" - the segmental bronchus and artery (II order)

5) ☐ the "leg" of the segment is directed to the base of the lung

46. Techniques to determine the boundaries of the lung segment during surgery:

1) ☐ the boundaries of the segment do not matter in anatomical resections of the organ

2) ☑ digital compression of the segmental bronchus in the hilum of the lung is accompanied by parenchymal collapse (atelectasis) in the bronchus ventilation zone

3) ☑ catheterization of the segmental bronchus with subsequent pressure increase – pulmonary parenchyma inflates

4) ☑ injection of dyes into the segmental artery (zone of discoloration of the pulmonary parenchyma)

5) ☐ determining the boundaries of the segment during anatomical resection provides better functional results in the postoperative period

47. Mobilization of the right main bronchus during pneumonectomy in the conditions of adhesions can be complicated by damage to the veins:

1) ☐ jugular venous arch

2) ☑ unpaired

3) ☑ upper hollow

4) ☐ right brachiocephalic

5) ☐ semi-unpaired

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48. When the left main bronchus is isolated and treated, there is a danger of arterial injury:

1) ☑ pulmonary trunk

2) ☐ brachiocephalic trunk

3) ☑ aorta (ascending part, arch, thoracic aorta)

4) ☐ left subclavian

5) ☐ left vertebrate

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49. Name the arteries that supply blood to the main bronchi and the source of their origin:

1) ☐ pulmonary artery branches

2) ☑ bronchial branches

3) ☐ brachiocephalic trunk

4) ☐ branches of the internal thoracic artery

5) ☑ thoracic part of the aorta

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50. Anatomical and functional features of the lungs that explain the frequency of localization of tuberculosis in the upper parts and pneumonia in the lower ones:

1) ☑ the upper sections have better ventilation conditions

2) ☑ the secretion from the bronchioles and bronchi goes away on its own

3) ☑ in the lower parts of the lung, there is stagnation of secretions in the bronchioles and bronchi

4) ☑ emptying the components of the bronchial tree of the lower parts requires postural drainage

5) ☐ features of the structure and function of bronchioles and bronchi are not important in the development of pathological conditions of the lung

51. Lung surgery is performed by:

1) ☐ longitudinal median sternotomy
2) ☑ bronchoscopy
3) ☑ thoracoscopy
4) ☑ transpleural thoracotomy
5) ☐ extrapleural thoracotomy

52. Classic operative approaches for open lung surgeries:

1) ☑ anterolateral without dissection of costal cartilages
2) ☑ anterolateral with dissection of the IV-V costal cartilages, stepping back 2-3 cm from the sternum (or with resection of one rib) along the IV intercostal space to the linea axillaris posterior
3) ☑ posterolateral along the paravertebral line from Th_IV to the angle of the scapula, then along the VI intercostal space to the middle axillary line
4) ☑ lateral approach ("standard" thoracotomy)
5) ☐ the choice of operative access is not determined by the type and localization of the pathological process

53. Anterolateral thoracotomy is used for surgical admission to:

1) ☑ upper lobe
2) ☑ upper segment (C_II)
3) ☑ middle lobe (right)
4) ☐ anterior basal segment (C_VIII)

5) ☑ medial segment (C_V)

54. Posterolateral access is used for prompt reception on:

1) ☐ middle lobe (right)

2) ☑ lower lobe

3) ☑ posterior basal segment (C_X)

4) ☐ apical segment (C_I)

5) ☐ lateral segment (C_III)

55. The essence of the surgical techniques of "wedge-shaped" and "marginal" resection of the lungs consists in:

1) ☑ removal of a small area of the lung

2) ☑ performing resection without taking into account the intraorgan distribution of bronchi and blood vessels

3) ☑ applying sealing hemostatic sutures along the resection line

4) ☑ elimination of the post-resection surface of the lung

5) ☐ performing resection taking into account the low-vascular zones of the lung

56. Stages of quality control of pneumorhaphy (lung suture):

1) ☑ the pleural cavity is filled with warm saline

2) ☐ remove fluid from the pleural cavity by suction

3) ☑ the lung is immersed in liquid

4) ☑ anesthesiologist increases airway pressure

5) ☐ the criterion for the tightness of the lung suture is the absence of air and blood bubbles

57. Typical stages of pneumonectomy (after thoracotomy):

1)	☑	mobilization of the lung (lung discharge from adhesions – pneumolysis)
2)	☑	isolation of lung root components
3)	☑	separate treatment of the pulmonary arteries, veins and main bronchus
4)	☑	removal of the lung
5)	☐	drainage of the pleural cavity and closure of the chest wall wound

58. In pneumonectomy for lung cancer, the treatment of the bronchopulmonary "triad" begins with isolation and ligation:

1)	☐	pulmonary artery
2)	☑	inferior pulmonary vein
3)	☐	main bronchus
4)	☑	superior pulmonary vein
5)	☐	the purpose of processing the components of the bronchopulmonary "triad" is to prevent the release of cancer cells into the bloodstream

59. In the first hours of a child's life, the lungs change:

1)	☑	position
2)	☑	volume
3)	☑	form
4)	☐	there is no change in the lung
5)	☑	weight

60. Large blood vessels are adjacent to the thoracic part of the trachea:

1) ☑ aortic arch

2) ☑ brachiocephalic trunk

3) ☐ superior vena cava

4) ☑ left brachiocephalic vein

5) ☑ initial part of the left common carotid artery

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61. Posteriorly and laterally to the thoracic part of the trachea are adjacent:

1) ☑ oesophagus

2) ☐ thymus

3) ☐ right phrenic nerve

4) ☑ right mediastinal pleura

5) ☑ left mediastinal pleura

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62. The epithelial layer of the trachea includes:

1) ☑ ciliated epithelial cells

2) ☑ mucus-producing goblet cells

3) ☑ basal (stem) cells

4) ☐ accumulation of myeloid cells

5) ☑ endocrinocytes that secrete norepinephrine, serotonin, dopamine

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63. The clinical significance of the anatomical relationship of the trachea with the aneurysm of the aortic arch is that:

1) ☐ syntopy of the trachea and large arteries of the thoracic cavity is not clinically significant

2) ☑ an aneurysm can disconnect the trachea and esophagus

3) ☑ sharply shift the trachea to the right side

4) ☑ constant pressure and pulsation of the aneurysm may be accompanied by ulceration of the tracheal wall

5) ☑ an aneurysm can rupture into the trachea with a fatal outcome

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64. Due to different conditions of mechanical action, the cartilaginous skeleton of the bronchi has a different structure outside and inside the lung:

1) ☑ outside the lung, the bronchi consist of cartilaginous semi-rings

2) ☑ when approaching the hilum of the lung, cartilaginous connections appear between the cartilaginous semirings

3) ☑ in the segmental bronchi, the semirings break up into separate plates

4) ☑ as the diameter of the bronchi decreases, the size of the plates decreases

5) ☐ bronchi and bronchioles have the same structure throughout

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65. Narrowing of the lumen of the trachea up to its closure is the result of compression of the organ from the outside:

1) ☑ enlarged tuberculous lymph nodes

2) ☑ tumors of neighboring mediastinal organs

3) ☑ mediastinal cysts

4) ☐ postoperative scars of the chest wall

5) ☐ in case of congenital deformity of the chest wall

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66. Caution during bronchoscopy (blockage of the only bronchus!) is dictated by the presence of options for bronchial discharge and lung malformations:

1) ☑ the right upper lobe bronchus extends from the trachea 1.25 cm above the carina tracheae (keel)

2) ☑ atelectasis of the lung

3) ☑ lung agenesis

4) ☑ bronchus atresia

5) ☐ esophageal atresia

67. In young children, the main bronchi are characterized by the following signs:

1) ☑ relatively narrow

2) ☑ cartilage is soft

3) ☑ elastic fibers are poorly developed

4) ☑ the mucous membrane (like the trachea) is poor in secretory elements

5) ☐ the bronchus does not differ in structure from the bronchi of an adult

68. Up to 70% of foreign bodies are localized in the right main bronchus, since it has:

1) ☑ more vertical direction (it is like a continuation of the trachea)

2) ☐ three lobar bronchi

3) ☑ shorter length (3 cm)

4) ☑ the wall contains 6-8 cartilages

5) ☑ wide (diameter 1.6cm)

69. The left main bronchus is characterized by the fact that it:

1) ☐ at the root of the lung, it is located upwards and posteriorly from the pulmonary artery

2) ☑ longer than the right one (4-5 cm)

3) ☑ the wall contains 9-12 cartilages

4)	☑	narrower than the right one (diameter 1.3 cm)
5)	☑	it is divided into 2 lobar bronchi

70. During pneumonectomy, the following method of suturing the stump of the main bronchus is used:

1)	☑	separate nodal sutures are applied with an atraumatic needle with synthetic thread or chrome-plated catgut
2)	☑	they capture all the membranes of the bronchus so that the membranous wall is connected to the cartilaginous wall
3)	☑	if necessary, the bronchus stump is covered with flaps of the mediastinal pleura (pleurisation)
4)	☐	ligate the main bronchus with a thick silk ligature
5)	☑	a mechanical suture is used with a suture of the bronchus stump (for example, UKB-40)

71. For the prevention of bronchopleural fistula, a plastic cover of the bronchus stump can be used:

1)	☑	mediastinal pleura
2)	☐	fibrous pericardial flap
3)	☑	the lobar or segmental bronchus is covered with the adjacent pulmonary parenchyma
4)	☑	a muscular flap of the diaphragm on the vascular "pedicle"
5)	☐	marshall's fascial checkered case

72. Requirements for pneumorhaphy:

1)	☑	ensuring aerostasis, i.e. tightness
2)	☑	achieving thorough hemostasis
3)	☑	the wound is captured to its full depth; The remaining cavity may be the site of the development of a lung abscess
4)	☐	intraoperative quality control of the lung suture

5)	☐	if necessary, the tightness of the suture is ensured by the second row - the pleuropleural suture

73. Methods of drainage of lung abscesses:

1)	☐	pneumotomy is performed in such a way as to exclude infection of the pleural cavity
2)	☑	bronchoscopic catheterization of the abscess provided that the abscess communicates with the bronchus
3)	☑	single-stage pneumotomy in the presence of adhesions of the parietal and pulmonary pleura in the abscess area
4)	☑	two-stage pneumotomy in the absence of adhesions between the pleura
5)	☑	pronounced intoxication of the body dictates the need for a single-stage pneumotomy even in the absence of pleural adhesions

74. Research methods necessary to clarify the localization of a lung abscess:

1)	☐	abscess puncture
2)	☑	physical (percussion, auscultation)
3)	☑	radiological
4)	☑	computed tomography
5)	☐	bronchography

75. Stages of single-stage pneumotomy for lung abscess:

1)	☑	layer-by-layer incision of soft tissues (10-12 cm) along the rib in the projection of the abscess
2)	☑	subperiosteal resection of 1-2 ribs (10-12 cm) and dissection of the inner plate of the periosteum over the abscess
3)	☑	in case of adhesions, the pleura is exfoliated from the intercostal muscles in a blunt way for 5-7 cm, in the middle of this place, the lung is punctured with a thick needle
4)	☑	when pus is obtained, the abscess is opened with an electric knife, the cavity is examined (with a finger

wrapped in a gauze swab) and drained with a thin catheter

5) ☐ in the postoperative period, daily injection of antibiotics into the abscess cavity

76. Drainage of the purulent lung cavity with a thin rubber tube provides:

1) ☑ evacuation of purulent discharge

2) ☑ injection of antibiotics into the purulent cavity

3) ☐ reliable hemostasis

4) ☐ straightening the lung

5) ☑ sclerosing of the purulent cavity

77. Stages of two-stage pneumotomy for lung abscess:

1) ☑ dissection of soft tissues along the rib and subperiosteal resection of 2 ribs above the abscess

2) ☑ compression into the pleural cavity of the periosteum, together with the parietal pleura, lubricated with iodine tincture (provocation of adhesion)

3) ☑ pressing the parietal pleura against the pulmonary pleura with a gauze swab inserted into the wound

4) ☑ after 8-10 days, the wound of the chest wall is opened, the tampon is removed; In the area of adhesions, the abscess is punctured and the abscess is opened with a needle

5) ☐ in the postoperative period, the acid-base state of the body is monitored

78. The intake of oxygenated air into the lungs and its excretion (gas exchange) is ensured by:

1) ☑ active breathing movements of the chest wall

2) ☑ contraction and relaxation of the diaphragm

3) ☑ the contractility of the lung in combination with the function of the respiratory tract

4) ☑ collateral breathing (bypassing the bronchi and bronchioles)

5) ☐ dysfunction of the respiratory apparatus is accompanied by respiratory and cardiovascular insufficiency

79. Collateral respiration in adults is carried out by means of peculiarly constructed acinuses:

1) ☑ in the lower lobes of the lung, atypical complexes of alveoli and alveolar passages are localized, indistinctly delineated into lobules and acinuses

2) ☑ there are pores in the walls of the alveoli

3) ☑ the alveoli and alveolar passages take the form of trabecular cords

4) ☑ alveolar cords create conditions for collateral respiration

5) ☐ the proliferation of connective tissue in the lung parenchyma causes the development of pulmonary hypertension

80. Secondary purulent pleurisy (90% of all purulent pleurisy or pleural empyema) occur as a complication of:

1) ☐ inflammatory processes of the neck organs

2) ☑ bronchopneumonia

3) ☑ lymphadenitis of the tracheal and bronchial nodes

4) ☑ croupous inflammation of the lung

5) ☑ lung abscess

81. According to S.D. Ternovsky, "complaints of abdominal pain in purulent pleurisy in case of insufficiently attentive examination can lead to an incorrect diagnosis":

1) ☑ acute appendicitis

2) ☐ helminthic obstruction

3) ☑ acute cholecystitis

4) ☐ ileocecal intussusception

5) ☑ acute pancreatitis

82. When treating purulent pleurisy, the following rules should be followed:

1) ☑ complete removal of pus from the pleural cavity
2) ☑ persistence of negative intrapleural pressure
3) ☑ exclusion of lung collaboration
4) ☑ injection of antibiotics into the pleural cavity
5) ☐ aspiration without letting air into the pleural cavity

83. Explain the concept of "interpleural space" and its clinical significance:

1) ☑ the gap between the right and left mediastinal pleuras, respectively, the anterior and posterior thoracic walls
2) ☑ the possibility of extrapleural access to the organs of the anterior and posterior mediastinum
3) ☐ in case of accesses to the mediastinal organs through the interpleural space, pneumothorax is excluded
4) ☐ there is no infection of the pleural cavity
5) ☐ no need for drainage of the pleural cavity

84. The anterior interpleural space consists of the following fields:

1) ☐ right
2) ☑ top
3) ☐ left
4) ☑ lower
5) ☐ pleural domes

85. The anterior and posterior interpleural spaces are the spaces between:

1) ☐ pulmonary and parietal pleura
2) ☑ right parietal pleura
3) ☑ left parietal pleura
4) ☐ sternum and pericardium
5) ☐ pericardium and esophagus

---

86. Operative access to the mediastinal organs through the interpleural spaces is called:

1) ☐ "standard" thoracotomy
2) ☑ extrapleural (without opening the pleural cavity)
3) ☑ longitudinal sternotomy
4) ☐ anterolateral thoracotomy
5) ☐ posterolateral thoracotomy

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87. Fascia endothoracica, lining the chest cavity, has the following lamina:

1) ☑ costal
2) ☑ diaphragmatic
3) ☐ clavicular-thoracic
4) ☐ own fascia of the breast
5) ☑ mediastinal

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88. The retrosternal cellular space, through which the sternotomy branch is passed, is limited by:

1) ☑ in front – by the posterior surface of the sternum

2)	☑	posteriorly by the retrosternal fascia, part of the fascia endothoracica
3)	☑	laterally by fascial septa of the retrosternal fascia to the edges of the sternum
4)	☑	from above – by fixation of the retrosternal fascia to the jugular notch of the sternum (separates the retrosternal space from the spaces of the neck); from below – by attaching to the diaphragm
5)	☐	laterally from these septa, the intrathoracic fascia forms a sheath for the internal thoracic vessels

89. The tela subserosa between the fascia endothoracica and the pleura is unevenly developed:

1)	☑	within the dome of the pleura and upper ribs, it is pronounced, which ensures free detachment of the pleura
2)	☑	laterally from the spine to a width of 5-6 cm, a significant layer of the subserous base creates the possibility of extrapleural access to the posterior mediastinum
3)	☑	downward from the IV rib, this layer extends to the diaphragm
4)	☑	in the anterior direction – reaches the border of the transition of the rib into the costal cartilages
5)	☐	the subserous base in all parts of the thoracic cavity is poorly developed

90. the mediastinum is limited to:

1)	☑	in front – by the sternum and retrosternal fascia
2)	☑	posterior – by the thoracic spine and the necks of the ribs lined with the prevertebral fascia (part of the intrathoracic fascia)
3)	☑	laterally – by the mediastinal pleura and the adjacent mediastinal plates of the intrathoracic fascia
4)	☑	from below – by the upper fascia of the diaphragm
5)	☐	from the sides – by the mediastinal surfaces of the lungs

91. At the level of the upper thoracic aperture, the mediastinal fiber is separated from the fascial-cellular spaces of the neck by fascial spurs located between the organs and connected to the fascia, covering:

1)	☐	pectoralis major

2) ☑ sternum

3) ☑ clavicle

4) ☐ anterior scalene muscle

5) ☑ thoracic vertebral bodies

---

92. The cellular spaces of the mediastinum include:

1) ☑ peritracheal and periesophageal

2) ☑ zagrudynnoe

3) ☑ periaortic

4) ☑ retropericardial

5) ☐ prevertebral

---

93. In accordance with the anatomical nomenclature in relation to the horizontal plane passing through the border of the handle and the body of the sternum (anterior) and the bodies ThIV-ThV (posterior), the mediastinum consists of the following sections:

1) ☑ top

2) ☐ average

3) ☑ lower

4) ☐ rear

5) ☐ front

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94. From the standpoint of operative access to the organs, the mediastinum is divided into sections:

1) ☑ top

2) ☑ front

3) ☑ average

4) ☑ back

5) ☐ anterior interpleural field

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95. Parts of the lower mediastinum:

1) ☐ top

2) ☑ front

3) ☑ average

4) ☑ back

5) ☐ pericardial cavity

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96. The upper mediastinum above and below is limited:

1) ☑ apertura thoracis superior (the organs of the neck continue into the mediastinal organs)

2) ☑ horizontal plane passing along the upper edge of the roots of the lungs

3) ☐ dome of the pleura

4) ☐ aortic arch

5) ☐ anterior-inferior sinus of the pericardium

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97. The anterior part of the lower mediastinum, between the body of the sternum and the anterior wall of the pericardium, contains:

1) ☑ a. et v. thoracicae internae

2) ☐ superior vena cava

3) ☑ retrosternal lymph nodes

4) ☑ anterior mediastinal lymph nodes

5) ☐ inferior vena cava

---

98. In the middle mediastinum there are:

1) ☑ pericardium with a heart enclosed in it and intrapericardial sections of large blood vessels

2) ☑ bifurcation of the trachea with the main bronchi

3) ☑ pulmonary arteries and veins

4) ☐ inferior vena cava

5) ☑ the phrenic nerves with their accompanying diaphragmatic-pericardial veins, as well as the lymph nodes

---

99. The posterior mediastinum, between the bifurcation of the trachea, the posterior wall of the pericardium and the spine, contains:

1) ☑ part of the thoracic aorta and thoracic duct

2) ☑ the esophagus and its accompanying vagus nerves with the esophageal plexus

3) ☑ unpaired and semi-unpaired vein and lymph nodes

4) ☑ sympathetic trunks with their nodes, large and small thoracic visceral nerves

5) ☐ inferior vena cava

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100. In the structure of the pericardium, as a fibro-serous sac, there are layers:

1) ☐ retrosternal fascia

2) ☑ fibrous (external), which passes to the walls of the extrapericardial sections of blood vessels, forming vascular sheaths for them

3) ☐ submucosa of the esophagus

4) ☑ the serous (inner), parietal plate, which lines the fibrous pericardium from the inside, and the visceral plate -

the outer lining of the heart - the epicardium

5) ☐ prevertebral fascia

101. The pericardium has the following sections:

1) ☐ fibrous pericardium

2) ☑ sternocostal (anterior) – between the right and left mediastinal pleura, connected to the sternum by the sternopericardial ligaments

3) ☑ diaphragmatic (lower), fused with the tendon center of the diaphragm

4) ☑ mediastinal (right and left), fused anteriorly and laterally with the mediastinal pleura

5) ☐ serous pericardium

102. Posteriorly, the mediastinal portion of the pericardium is adjacent to:

1) ☐ superior vena cava

2) ☑ esophagus

3) ☑ of the thoracic part of the aorta

4) ☑ unpaired and semi-unpaired veins

5) ☐ inferior vena cava

103. In the pericardial cavity, sinuses are formed between the pericardium, the surface of the heart and large vessels:

1) ☑ transverse

2) ☑ slash

3) ☐ costomediastinal

4) ☐ diaphragmatic-mediastinal

5) ☑ anterior-inferior (distinguished by clinicians)

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104. With the transition of the sternocostal pericardium to the diaphragmatic pericardium, the anterior-inferior sinus is formed, where the following can accumulate:

1) ☑ blood (hemopericardium)

2) ☑ trusudat (hydropericardium)

3) ☑ exudate

4) ☐ air

5) ☑ lymph

---

105. The walls of the transverse sinus, located at the base of the heart, are formed by:

1) ☑ in front and above – by the pulmonary trunk

2) ☑ posterior – by the anterior surface of the right atrium

3) ☑ rear – V. Cava Superior

4) ☑ in front and above – by the initial part of the ascending part of the aorta

5) ☐ the transverse sinus can be entered from the left - from the side of the truncus pulmonalis, from the right - from the side of the ascending part of the aorta

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106. The oblique sinus of the pericardium, located on the diaphragmatic surface of the heart, is limited by:

1) ☑ estuary portions of the left pulmonary veins – on the left

2) ☑ inferior vena cava – on the right

3) ☑ left atrium – in front

4) ☑ pericardium – posterior

5) ☐ In purulent pericarditis, abscesses may be localized in the oblique sinus

---

107. To examine the oblique sinus, the heart should be displaced:

1)	☑	anterior
2)	☐	to the left
3)	☑	up
4)	☐	posterior
5)	☑	right

108. Pericardiotomy by extrapleural access can be performed within the sternal field, respectively:

1)	☑	attachment of the sternocostal part of the pericardium to the chest wall
2)	☑	V-VII to the left costal cartilages
3)	☑	sternum
4)	☐	jugular tenderloin of the sternum
5)	☐	at the level of the VI-VII intercostal spaces and linea axillaris media

109. Transverse pericardial sinus is used for:

1)	☑	operations on a "dry" heart (when a heart-lung machine is connected)
2)	☑	heart transplantation
3)	☐	treatment of pulmonary arteries and veins during pneumonectomy for lung cancer with metastases in the root of the organ
4)	☐	pericardial punctures
5)	☐	pericardiotomy for drainage of the pericardial cavity

110. The pericardium of a newborn baby is characterized by:

1) ☑ spherical (rounded) shape, tightly fitting to the heart

2) ☑ its upper border is located high – along the line connecting the sternoclavicular joints, the lower one – corresponds to the lower border of the heart

3) ☑ motile due to underdevelopment of the sterno-pericardial ligaments

4) ☑ small cavity volume

5) ☐ by the age of 14, the boundaries of the pericardium and its relationship with the mediastinal organs are the same as in adults

---

111. The shape of the heart is not constant, it depends on:

1) ☐ changes in pressure in the chest cavity

2) ☑ age

3) ☑ pathological conditions of the organ

4) ☑ constitution

5) ☐ pathological conditions of the abdominal cavity organs

---

112. The heart has surfaces:

1) ☐ apex cordis

2) ☑ sternocostal, or anterior, facing the sternum and costal cartilages

3) ☑ lower, or diaphragmatic, which in the clinic is called posterior

4) ☑ pulmonary, or lateral surfaces, which are visible when the lungs are displaced from the heart

5) ☐ basis cordis

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113. The anterior surface of the heart is formed by:

1) ☑ anterior wall of the right ventricle

2) ☑ only along the left edge – with the left ventricle

3) ☑ the anterior wall of the right atrium and the right ear – from above and to the right

4) ☑ the apex of the left ear covering the truncus pulmonalis

5) ☐ left atrium

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114. Large blood vessels, the initial parts of which belong to the anterior surface of the heart:

1) ☑ the superior vena cava is on the right and somewhat posterior

2) ☑ the ascending part of the aorta is between v. cava inferior et truncus pulmonalis

3) ☑ pulmonary trunk occupying a left-sided position

4) ☐ coronary sinus of the heart

5) ☐ inferior vena cava

---

115. There are furrows on the anterior surface of the heart:

1) ☑ coronary – the border of the atria and ventricles

2) ☐ in this sulcus, in the subepicardial tissue, the right coronary artery is located

3) ☑ the anterior ventricular sulcus corresponds to the interventricular septum

4) ☐ in this sulcus passes the anterior interventricular branch of the left coronary artery

5) ☐ in the same furrow lies the great vein of the heart

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116. The diaphragmatic (posterior) surface of the heart is limited:

1) ☐ pulmonary trunk

2) ☑ left atrium

3) ☑ right atrium

4) ☑ part of the (small) left ventricle

5) ☐ it is adjacent to the organs of the posterior mediastinum

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117. In the coronary sulcus of the posterior surface of the heart there are:

1) ☑ right coronary artery

2) ☑ enveloping branch of the left coronary artery

3) ☑ coronary sinus

4) ☑ small vein of the heart

5) ☐ pulmonary trunk

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118. Along the posterior interventricular sulcus, corresponding to the posterior edge of the interventricular septum, there are:

1) ☑ posterior interventricular branch of the right coronary artery

2) ☑ middle vein of the heart

3) ☐ coronary sinus

4) ☐ small vein of the heart

5) ☐ inferior vena cava

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119. Heart membranes:

1) ☐ fibrous pericardium

2) ☑ epicardium – outer membrane – visceral layer of the serous pericardium

3) ☑ myocardium – up to 7/10 of the thickness of the heart wall – cardiac striated muscle tissue consisting of cardiomyocytes

4) ☑ endocardium – one layer of endotheliocytes on the basement membrane; On the border with the myocardium

there is a thin layer of loose fibrous connective tissue

5) ☐ parietal sheet of the serous pericardium

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120. The heart cavity consists of chambers:

1) ☐ left or arterial heart; right or venous heart

2) ☑ left atrium

3) ☑ left ventricle

4) ☑ of the right atrium

5) ☑ of the right ventricle

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121. In the right atrium, there are:

1) ☐ the mouth of the inferior vena cava

2) ☑ venous sinus

3) ☑ own right atrium

4) ☑ right ear of the heart

5) ☐ the mouth of the superior vena cava

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122. The atrial septum on the side of the atrium dextrum has:

1) ☑ oval fossa closed by a thin membrane

2) ☑ the fossa is the remnant of an overgrown oval foramen that communicated the right and left atria of the fetus

3) ☐ failure of fossa ovale, especially in combination with other malformations (mitral valve stenosis), leads to severe circulatory disorders

4) ☐ primary defects of the interatrial septum are characterized by a slit-valve structure, allowing blood to pass from right to left

5) ☐ atrial septal defect has no clinical significance

123. The interventricular septum has parts:

1) ☐ average
2) ☑ muscular – anterior-inferior (great)
3) ☑ membranous – upper-posterior (closer to the atria)
4) ☐ top
5) ☐ bottom

124. In the upper part, the right ventricle has holes:

1) ☐ superior vena cava
2) ☑ right atrioventricular
3) ☐ coronary sinus opening
4) ☐ arterial cone with supraventricular ridge
5) ☑ opening of the pulmonary trunk

125. The right atrioventricular foramen is closed by the right atrioventricular (tricuspid) valve:

1) ☑ on the front surface – the front leaflet
2) ☑ on the posterior-lateral flap – the posterior leaflet
3) ☐ when the ventricles contract, the free edges of the leaflets close
4) ☑ on the medial semicircle there is a septal leaflet
5) ☐ the leaflets in the atrium do not turn out, since they are held by tendon chords on the side of the ventricle

126. The right atrium has holes:

1)	☑	superior vena cava
2)	☑	inferior vena cava
3)	☐	along the lower edge of the foramen of V. cava inferior is the flap of the inferior vena cava
4)	☐	in the embryo (and fetus), the V. cava inferior flap directs blood from the right atrium to the left atrium through the foramen ovale
5)	☐	between the openings of the vena cava there is an intervenous tubercle - the remnant of the valve that directs the embryo's blood from V. cava superior to the right atrioventricular foramen

127. In addition to the openings of the vena cava, the right atrium contains:

1)	☑	right atrioventricular foramen
2)	☑	coronary sinus opening (between the opening of the inferior vena cava and the atrioventricular foramen)
3)	☑	at the mouth of the coronary sinus there is a thin sickle-shaped fold – the flap of the coronary sinus
4)	☑	next to the coronary sinus opening is the opening of the smallest veins
5)	☐	opening of the pulmonary trunk

128. At the beginning of the pulmonary trunk there is a valve with semilunar flaps:

1)	☑	front
2)	☑	left
3)	☑	rRight
4)	☐	the lunula (sinus) of the semilunar flap
5)	☐	with a drop in pressure in the right ventricle, the edges of the flaps close due to the return flow of blood filling the sockets (sinuses)

129. The left atrium contains holes:

1)	☑	two - right pulmonary veins
2)	☑	two - left pulmonary veins
3)	☐	pulmonary veins do not have valves
4)	☑	left atrioventricular
5)	☐	coronary sinus

130. The left atrioventricular (mitral) valve consists of triangular leaflets:

1)	☑	anterior, starting at the medial semicircle of the foramen (near the interventricular septum)
2)	☑	posterior, starting from the posterolateral semicircle
3)	☐	left
4)	☐	right
5)	☐	semilunar

131. The aortic opening of the left ventricle (located to the right of the atrioventricular foramen) is covered by a valve of semilunar flaps:

1)	☑	back
2)	☑	right
3)	☑	left
4)	☐	between each flap and the wall of the aorta there is a socket (sinus) of the semilunar flap
5)	☐	in the middle of the free edges, the flaps have nodules larger than those of Truncus pulmonalis

132. The arteries of the heart are predisposed to atherosclerotic damage due to:

1)	☑	depart at a right angle or approaching it (right coronary – 63.4%, left – 42%)
2)	☑	with age, the sheath of the coronary arteries, formed by the subepicardial base, scleroses and fuses with their walls
3)	☑	the coronary arteries have a "diving" course (15.2 – 90%: alternating subepicardial and intimyocardial positions)
4)	☑	the bulk of the blood enters the arteries during diastole
5)	☐	the arteries and veins of the heart form the third – coronary circulation

133. The main components that make up the conduction system of the heart are:

1)	☑	sinoatrial node (Keys-Fleck node in the wall of the right atrium between the right ear and the superior vena cava)
2)	☑	atrioventricular node (Aschoff-Tavard node in the right fibrous triangle below the attachment of the septal leaflet of the tricuspid valve)
3)	☑	atrioventricular bundle (bundle of His connecting the atrial myocardium with the ventricular myocardium)
4)	☑	right and left pedicles of the atrioventricular bundle
5)	☐	the terminal branches of the fibers of the conduction system (Purkinje fibers) end at the cardiomyocytes of the ventricles

134. In the heart ears, as additional blood reservoirs, blood clots can form due to:

1)	☑	slowing down blood flow in case of cardiac disorders
2)	☑	advanced stenosis of the atrioventricular orifices
3)	☑	of the ciliated artery
4)	☑	post-infarction aneurysy of the left ventricle
5)	☐	atherosclerosis of the aortic arch

135. The essence of the stages of surgery in the combination of secondary ventricular septal defect with mitral valve stenosis:

1)	☑	the wall of the right atrium is dissected along the line connecting the openings of the superior and inferior vena cava
2)	☑	in 70-85% of cases, the edges of the defect are sutured with a wrapping suture
3)	☑	in case of extensive defects, a patch of pericardium or Teflon (in adults) is used
4)	☑	at the same time, mitral commissurotomy is performed
5)	☐	the operation is performed on a "dry" heart under the cover of AIK

136. A congenital ventricular septal defect is characterized by:

1)	☑	in 85-90% of cases, it is an anterior subcomb defect in the membranous part of the interventricular septum
2)	☑	in the immediate vicinity of the atrioventricular bundle
3)	☑	the defect of the muscular part of the septum can be multiple, such as "Swiss cheese"
4)	☑	closure of the defect with a Teflon patch on a "dry" heart is possible from the right atrium through the tricuspid foramen, as well as from the left ventricle
5)	☐	the greatest danger of surgery is damage to the bundle of His or her legs

137. Pericardial puncture is indicated for:

1)	☐	pneumothorax
2)	☑	hydropericardium
3)	☐	hemothorax
4)	☑	hemopericardium
5)	☐	chylothorax

138. The external landmarks of the pericardial puncture according to Larrey are:

1)	☐	apex of the xiphoid process
2)	☐	jugular tenderloin of the sternum
3)	☑	left margin of the xiphoid process
4)	☑	the place of attachment of the cartilage of the VII left rib
5)	☐	oboniac Point

139. The Voynich-Syanozhensky security triangle is limited to:

1)	☑	on the right – by the fold of the right mediastinal pleura
2)	☐	on top – with a jugular notch of the sternum
3)	☑	on the left – by the fold of the left mediastinal pleura
4)	☐	from below – by the costodiaphragmatic sinus
5)	☑	from below – with a diaphragm

140. Pericardial puncture and pericardiotomy through the safety triangle exclude complications such as:

1)	☐	hemopericardium
2)	☑	pneumothorax
3)	☐	hydropericardium
4)	☑	infection of the pleural cavity
5)	☐	liver damage

141. For intracardiac administration of drugs, the following guidelines are used:

1)	☑	IV intercostal space

2) ☐ linea medioclavicularis

3) ☐ apex of the xiphoid process

4) ☐ the angle formed by the left edge of the xiphoid process and the cartilage of the VII of the left rib

5) ☑ linea parasternalis

142. Stages of suturing the heart wound after pericardiotomy:

1) ☑ the wound is closed with the index finger of the left hand

2) ☑ the edges of the wound are brought together with "U"-shaped holders

3) ☑ the wound is sutured with nodular or "U"-shaped sutures with a synthetic thread in an atraumatic needle with the capture of all the membranes of the heart, stepping back from the edge of 6-8 mm

4) ☑ in case of cardiac arrest, sutures are applied in the intervals between direct massage of this organ

5) ☐ fibrillation is removed by discharging a defibrillator with a voltage of 2-3 kV

143. In case of coronary heart disease, the following operations are performed:

1) ☑ coronary artery stenting

2) ☑ imposition of mammary-coronary anastomosis (a. thoracica interna)

3) ☑ coronary artery bypass grafting using an autovena or artery (tributaries of v. saphena magna, a. radialis)

4) ☐ a. thoracica interna is bandaged

5) ☑ transmyocardial laser myocardial revascularization (TMLMR)

144. Types of operations for coarctation of the aorta - congenital narrowing of the aortic segment distal to the mouth of a. subclavia sinistra:

1) ☑ resection of coarctation followed by aortic ends joining

2) ☑ isthmoplasty - sewing a patch into the site of narrowing of the aorta

3) ☑ coarctation resection with aortic plasty with prosthesis

4) ☐ endarterectomy from the thoracic aorta

5) ☐ ligation of the thoracic part of the aorta

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145. Separation of the small (pulmonary) and large (bodily) circulation with an open duct arteriosus (Botallo) is carried out by:

1) ☑ endovascular embolization (transarterial or transvenous access)

2) ☑ thoracoscopic duct clipping

3) ☑ stitching the duct with a vasosuturing device

4) ☑ dissection of the duct between the clamps with subsequent application of a coiled vascular suture to the aortic and pulmonary ends (according to A.N. Bakulev) by an open method (historical interest)

5) ☐ duct stenting

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146. Resection of the thoracic part of the esophagus in cancer is performed from the following approaches:

1) ☑ right-sided thoracotomy in the VI intercostal space

2) ☑ left-sided thoracotomy in the VII intercostal space when the tumor is localized in the lower third of the thoracic esophagus

3) ☐ thoracoabdominal Access

4) ☐ "standard" thoracotomy

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147. The following complications are possible in the process of mobilizing the thoracic part of the esophagus:

1) ☑ right-sided chylothorax with thoracic duct injury

2) ☑ bleeding due to damage to the unpaired vein

3) ☑ infection of the pleural cavity and posterior mediastinum with esophageal microflora

4) ☐ injury to v. cava inferior

5) ☐ injury to the thoracic part of the aorta

148. The following types of operations are used for thoracic esophageal cancer:

1) ☐ esophagostomy

2) ☑ resection of the esophagus with the formation of external fistulas of the esophagus and stomach (Dobromyslov-Torek operation)

3) ☐ esophagotomy

4) ☑ resection of the esophagus with restoration of the digestive tube by means of esophageal-gastric or esophageal-small intestinal anastomoses

5) ☐ gastrojejunal anastomosis

149. Resection of the esophagus for cancer of the lower third by the left-sided thoracoabdominal approach can be completed in the following ways:

1) ☐ creation of esophago-esophagoanastomosis

2) ☑ plastic surgery of the esophagus with a tube from the great curvature of the stomach

3) ☐ the formation of an external fistula of the esophagus

4) ☑ replacement of the resected part of the esophagus with the stomach raised into the chest cavity

5) ☑ the imposition of an esophagoejunoanastomosis

150. For esophagoplasty, the organs of the peritoneal cavity are used:

1) ☑ colon (right and left halves)

2) ☑ large curvature of the stomach

3) ☑ small intestine

4)	☑	ileocecal angle
5)	☐	a longitudinal tube formed from the skin of the chest wall by wrapping it inside the epidermis (historical interest)

151. The main ways of conducting a section of the intestine on the "pedicle" during esophagoplasty:

1)	☑	presternal (antethoracic)
2)	☑	retrosternal (retrosternal, through the anterior mediastinum)
3)	☑	through the posterior mediastinum
4)	☑	transpleural
5)	☐	esophageal bougienage

152. The presence of the border zone of the cerebral and facial parts of the head - the base of the skull - explains such formidable intracranial complications and their symptoms as:

1)	☑	meningitis and brain abscess with purulent inflammation of the middle ear, paranasal sinuses, orbit
2)	☐	damage to the wall of the brachiocephalic trunk and the common carotid artery
3)	☑	germination of a malignant tumor of the cells of the ethmoid labyrinth onto the dura mater
4)	☑	cerebrospinal fluid leakage from the nose and nasopharynx in case of skull base fracture in the anterior cranial fossa and pneumocephaly
5)	☑	cranial nerve dysfunction with corresponding neurological symptoms in the facial area

153. The basis for combining the frontal, parietal and occipital regions into one area is:

1)	☑	form the vault of the cerebral region, characterized by a spherical surface
2)	☑	have the same layer-by-layer structure
3)	☐	inflammatory processes and extracranial hematomas are localized only in the subcutaneous base

4) ☑ neurovascular bundles are directed from the lower border (periphery) of the region to the center (parietal tubercle)

5) ☑ the same types of localization, clinical picture, complications of pathological processes and surgical techniques

154. The skin of the fronto-parieto-occipital region is characterized by the fact that it:

1) ☑ covered with hair (except for the frontal area)

2) ☑ contains sweat glands and a large number of sebaceous glands

3) ☑ thick

4) ☐ innervated by the branches of the VII cranial nerve

5) ☑ sedentary due to strong fusion with the tendon helmet

155. Anatomical prerequisites for traumatic scalped wounds of the fronto-parieto-occipital region:

1) ☑ the skin is firmly connected to the tendon helmet by connective tissue bridges

2) ☑ the tendon helmet is separated from the periosteum by the subaponeurotic space

3) ☐ the periosteum is firmly connected to the bones in the sutures

4) ☐ the subcutaneous base has a pronounced cellular structure

5) ☐ between the bone and the periosteum is the subperiosteal space

156. Diffuse purulent processes and hematomas of the frontal-parietal-occipital region are localized in:

1) ☑ subperiosteal space (within the boundaries of the bone)

2) ☐ subcutaneous basis

3) ☐ in the thickness of the periosteum

4) ☑ subaponeurotic space

5) ☐ in the thickness of the skin

157. Significant bleeding in wounds of the soft tissues of the frontal-parietal-occipital region is explained by:

1) ☑ the arteries of the region – branches of the external carotid – form an anastomotic network with the arteries of the other half

2) ☑ the branches of the external carotid artery are widely anastomosed with the arteries of the carotid and vertebrobasilar basins

3) ☑ the blood vessels of the area gape (do not collapse); Connective tissue bridges are woven into their outer shell, going from the skin to the tendon helmet

4) ☐ arteries and veins occupy a superficial position

5) ☐ the veins of the area are anastomosed with the pterygoid and pharyngeal plexuses

158. The anatomical relationship of a. meningea media with the cerebral surface of the squamous part of the temporal bone determines the difficulties of hemostasis:

1) ☑ in 2/3 of cases, the artery trunk is located in the bony canal

2) ☑ on the surface of the dura mater, the branches of the artery (frontal, parietal) cannot be captured by ordinary hemostatic clamps, since they lie in its thickness closer to the superficial plate

3) ☑ the proximal end of the artery is shortened into the spinous foramen

4) ☑ the branches of a. meningea media are widely anastomosed with other meningeal branches

5) ☐ the anatomical relationship of a. meningea media with lamina interna is of no practical importance for hemostasis

159. In the case of occipital carbuncle, septic thrombophlebitis can spread along the mastoid emissary vein into the dura mater sinuses:

1) ☐ sinus drain

2) ☐ straight

3)	☑	transverse
4)	☐	superior sagittal
5)	☑	sigmoid

160. Layers that make up the bone of the cranial vault and their characteristics:

1)	☑	the spongy substance contains red bone marrow and diploic veins
2)	☐	endost is a dura mater, loosely connected to the bones of the fornix
3)	☑	the outer lamina is thick, strong, with a large radius of curvature
4)	☑	the inner (glass) plate is thin, fragile, with a smaller radius of curvature
5)	☐	the periostus is loosely connected to the outer lamina

161. Features of the squamous part of the temporal bone:

1)	☑	the periosteum is firmly fused with the scaly part
2)	☑	although it consists of three layers, it is thinned (1-3 mm)
3)	☑	the spongy substance is weakly expressed
4)	☑	the bone is translucent and has low strength
5)	☐	adjacent to the medullary surface of the scaly part is a. temporalis superficialis

162. The dura mater sinus is an organ that provides optimal intracerebral (intracranial) pressure (N.N. Burdenko), which differs from the peripheral vein:

1)	☑	when damaged, it gapes, does not fall off
2)	☐	the dural sinus is not different from v. femoralis
3)	☑	the sinus (upper sagittal) provides filtration of cerebrospinal fluid

4) ☑ no valves

5) ☑ no middle shell

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163. Injuries to the cerebral region of the head are accompanied by the formation of intracranial hematomas:

1) ☑ epidural

2) ☑ subdural

3) ☐ subperiosteal

4) ☑ subarachnoid hemorrhage

5) ☑ intracerebral

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164. The most formidable syndrome of the intracranial acute volumetric process is displacements of various parts of the brain (dislocation syndrome):

1) ☑ under the sickle-shaped process

2) ☑ into the opening of the cerebellar

3) ☑ into the large occipital foramen

4) ☐ cerebral herniation is accompanied by severe functional disorders of the respiratory and cardiovascular systems

5) ☐ in the complex treatment of dislocation syndrome, external and internal decompression of the brain is used

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165. On lumbar puncture, the following signs indicate subarachnoid hemorrhage:

1) ☐ the Beer needle does not drain cerebrospinal fluid

2) ☐ cerebrospinal fluid of opalescent color enters

3) ☑ cerebrospinal fluid flows out in a stream

4) ☐ there is an admixture of pus in the cerebrospinal fluid

5) ☑ cerebrospinal fluid of the color of "cranberry juice"

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166. Pathways of CSF outflow, blockage of which can be the cause of occlusive hydrocephalus:

1) ☑ interventricular foramen (Monroe) – communicate the lateral ventricles with the III-th

2) ☑ aqueduct of the midbrain (Sylvian aqueduct) – connects the III with IV ventricles

3) ☐ arachnoid granulations

4) ☑ median aperture of the IV ventricle (Magendi's foramen) – communicates the IV ventricle with the subarachnoid space

5) ☑ lateral apertures of the IV ventricle (Luschka's foramen) – connect the IV ventricle with the subarachnoid space

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167. Clinical and morphological manifestations of cerebral circulation disorders are explained by blood supply to the brain from basins of various developments:

1) ☐ arterial (Willisian) circle of the cerebrum

2) ☐ pulmonary circulation

3) ☑ carotid basin

4) ☐ large (bodily) circulation

5) ☑ vertebrobasilar basin

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168. In epidural hematoma, trefination holes are applied in accordance with the Kronlein scheme at the intersection points:

1) ☑ anterior vertical with a lower horizontal, i.e. in the middle of the upper edge of the zygomatic arch

2) ☐ along the bisector of the angle between the projection of the central sulcus and the upper horizontal

3) ☑ front vertical with the upper horizontal

4) ☑ rear vertical with upper horizontal

5) ☐ the point of intersection of the front vertical with the upper horizontal with the point of intersection of the sagittal line with the rear vertical

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169. Occlusive hydrocephalus with impaired outflow of cerebrospinal fluid from the ventricles of the brain to the subarachnoid space is a consequence of:

1) ☐ cerebrospinal fluid hypersecretion

2) ☑ adhesions in the cerebrospinal fluid tract

3) ☑ brain tumors

4) ☐ disorders of CSF resorption

5) ☑ brain cysts of various origins

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170. The facial part of the head consists of the following areas:

1) ☑ lateral with its deep section

2) ☐ parotid-masticatory

3) ☑ eye sockets

4) ☑ of the nose with paranasal sinuses

5) ☑ mouth

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171. The fascial capsule of the parotid gland has "weak" points:

1) ☐ at the exit from the gland of the superficial temporal artery

2) ☑ between the medial pterygoid muscle and the styloid process with the muscles of the "anatomical bouquet" (pharyngeal process of the gland)

3) ☐ at the attachment site of fascia parotideomasseterica to the corner of the lower jaw

4) ☑ cartilage clippings of the external auditory canal that allow lymphatic vessels to pass through

5) ☐ at the exit point of the ductus parotideus

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172. The anatomical relationship of the parotid-masticatory fascia with the parotid gland in purulent mumps is determined by:

1) ☑ unevenness and non-simultaneity of the gland lesion by the purulent process

2) ☑ the occurrence of shooting pain, which intensifies with increased swelling and chewing

3) ☑ there may be difficulty swallowing and breathing

4) ☑ dry mouth due to a sharp decrease in salivation

5) ☐ three sore points are identified: at the tragus of the auricle, at the apex of the processus mastoideus, downward from the zygomatic arch

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173. In the thickness of the parotid gland, according to the fossa retromandibularis, there are:

1) ☑ the trunk of the facial nerve and the branches of the 2nd order of its parotid plexus

2) ☐ pterygoid plexus

3) ☑ external carotid artery with maxillary and superficial temporal arteries branching off from it

4) ☑ deep parotid lymph nodes

5) ☐ n. mandibularis

6) ☑ v. retromandibularis

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174. Purulent leaks in phlegmons of the buccal region spread to neighboring areas along the processes of the fatty body of the cheek:

1) ☑ temporal – into the temporal fossa under the zygomatic arch along the lateral wall of the orbit

2) ☐ from the pterygomandibular space along the course of n. lingualis into the maxillolingual groove

3) ☑ orbital fossa – in the subtemporal fossa to fissura orbitalis inferior

4) ☐ from the interpterygoid space into the temporal-pterygoid space along the course of the deep temporal (anterior and posterior) neurovascular bundles

5) ☑ pterygopubic, which through the inferior-medial part of the superior orbital fissure can reach the cavernous sinus of the dura mater

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175. The deep area of the face is represented by the contents of the pits:

1) ☐ canine

2) ☑ subtemporal

3) ☐ retromaxillary

4) ☐ temporal

5) ☑ pterygopalatal

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176. The pterygomandibular space communicates with:

1) ☑ interpterygoid space

2) ☐ retrobulbar space of the orbit

3) ☑ temporal-pterygoid space

4) ☑ cheek fat lump

5) ☑ lateral space of the floor of the oral cavity (maxillolingual groove)

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177. Features of blood supply and position of neurovascular bundles that determine the difficulties of hemostasis in facial injuries:

1) ☐ arteries and veins are directed from bottom to top, from the lateral side to the medial side

2) ☑ some of the blood vessels are located in deep and hard-to-reach parts of the face (pterygopalatine fossa, mandibular canal, retrobulbar space of the orbit, etc.)

3) ☑ a large number of intra- and intersystem anastomoses

4) ☐ the veins of the facial region are extracranial tributaries of v. jugularis interna

5) ☐ blood vessels have a close relationship with the facial muscles

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178. The upper wall of the orbit forms:

1) ☑ the lower wall of the anterior cranial fossa

2) ☐ the upper wall of the pterygopalatine fossa

3) ☐ lateral wall of the subtemporal fossa

4) ☑ the upper wall of sinus frontalis

5) ☐ lateral wall of the temporal fossa

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179. The medial wall of the orbit in the suture between the frontal bone and the orbital plate of the ethmoid bone has openings for neurovascular bundles:

1) ☐ infraorbital

2) ☑ anterior lattice

3) ☐ deep temporal

4) ☐ greater palatine

5) ☑ posterior lattice

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180. The retrobulbar space (corpus adiposum orbitae) contains nerves:

1) ☑ the visual one, at the lateral semicircle of which the ganglion ciliare is located

2) ☐ ophthalmic and infraorbital

3) ☑ oculomotor and block

4) ☑ deviating

5) ☑ ophthalmic (the first branch of the trigeminal nerve)

181. a. centralis retinae (from the ophthalmic artery) supplies blood to:

1) ☐ lacrimal gland

2) ☑ optic nerve

3) ☐ conjunctiva

4) ☑ retina – the inner (sensitive) membrane of the eyeball

5) ☐ choroid of the eyeball

182. The ophthalmic artery anastomoses with the branches of a. carotis externa:

1) ☐ occipital

2) ☑ facial

3) ☑ superficial temporal

4) ☐ posterior Ear

5) ☐ maxillary

183. The maxillary sinus is involved in the inflammatory process in the following cases:

1) ☐ pulpitis

2) ☑ periapical dento-alveolar abscess of the second upper molar

3) ☐ cellulitis of the buccal region

4) ☐ canine fossa abscess

5) ☑ nasopharyngitis

184. The lymphoepithelial ring of the nasopharynx (Waldeyer-Pirogov) consists of tonsils:

1)	☑	two palatine – in the amygdalic fossa between the palatine arches; The largest sizes are 8-13 years old
2)	☑	two tubal - at the pharyngeal opening and the cartilaginous part of the auditory tube; The greatest development is achieved at the age of 4-7 years
3)	☐	circumpharyngeal and retropharyngeal lymph nodes
4)	☑	pharyngeal (adenoid) tonsils – at the transition of the upper pharyngeal wall to the posterior wall; It has the largest size at 8-20 years
5)	☑	lingual tonsils – at the root of the tongue; In adolescence, it reaches its maximum development

185. Nasopharyngitis is complicated by the transition of infection to:

1)	☑	paranasal sinuses (sinusitis-maxillitis or maxillary sinusitis develops first)
2)	☑	auditory tube and tympanic cavity (inflammation of the middle ear)
3)	☑	conjunctiva
4)	☐	parotid gland
5)	☑	larynx, trachea, bronchi

186. The palatine tonsils have a close relationship with the arteries:

1)	☐	external carotid
2)	☑	facial
3)	☐	lingual
4)	☐	maxillary
5)	☑	internal sleepy

187. A formidable complication of a symmetrical fracture of the lower jaw in the chin region is mechanical

asphyxia due to:

1)	☑	displacement of the middle fragment of the jaw posteriorly and downward by pulling the anterior muscles of the suprahyoid group
2)	☐	disorders of fixation of the lower jaw in the temporomandibular joint
3)	☐	the pull of the temporal muscle, which raises the lower jaw and pulls it somewhat posteriorly
4)	☑	posteriorly displacement of the attachment of the muscles that stretch the tongue anteriorly, followed by its sinking and pressure on the epiglottis
5)	☐	complete anatomical interruption of n. alveolaris inferior

188. "Tunnel" is a pronounced pain syndrome with the involvement of alveolar neurovascular bundles in the inflammatory process due to:

1)	☐	вертикальным положением верхних задних альвеолярных пучков
2)	☑	stubbornness of the walls of the bony canals of the alveolar neurovascular bundles
3)	☐	anastomoses of the branches of the facial and trigeminal nerves
4)	☑	sharp compression of the components of the neurovascular bundle during the transition of the inflammatory process (pulpitis) to the alveolar canal
5)	☐	outflow of blood into the pterygoid plexus

189. In tongue cancer, metastases are localized in the following lymph nodes:

1)	☑	submandibular
2)	☑	subchin
3)	☐	buccal
4)	☑	retropharyngeal (from the posterior third of the tongue)
5)	☑	jujuge-scapulo-hyoid node

190. The cellular space of the floor of the oral cavity is connected with:

1)	☑	submandibular space
2)	☐	anterior part of the circumpharyngeal space
3)	☐	cheek fat lump
4)	☑	pterygomandibular space
5)	☐	parotid space

191. In relation to the bones of the cranial vault, the following methods of trepanation are distinguished:

1)	☐	trefination – the formation of milling holes
2)	☑	resection – after removing part of the bone and performing an operative technique in the cranial cavity, the bone defect remains open
3)	☑	osteoplastic – the periosteal-bone flap is fully or partially placed in its original place, closing the defect
4)	☐	cranioplasty
5)	☐	decompression trepanation for a depressed fracture of the "celluloid sac" type

192. In osteoplastic craniotomy according to Olivecron, in the temporoparietal region, in addition to the cutaneous aponeurotic flap, a flap is formed, consisting of:

1)	☑	bone
2)	☑	periosteum
3)	☐	dura mater
4)	☐	aponeurotic helmet
5)	☑	temporal muscle

193. Stages of osteoplastic craniotomy:

1)	☑	formation of temporary cutaneous-aponeurotic and periosteal-bone flaps
2)	☑	dissection of the dura mater and performance of surgical technique
3)	☑	hermetic closure of the dura mater
4)	☑	return of the flaps to their original place and their fixation
5)	☐	performing cranioplasty

194. The choice of the incision of the dura mater (horseshoe, linear, cruciform) in osteoplastic craniotomy is determined by:

1)	☐	position of the patient on the operating table
2)	☑	purpose of the operation
3)	☑	direction of the arteries and veins of the dura mater
4)	☑	type of operative reception
5)	☑	the position of the sinuses

195. Types of liquor-draining operations for hydrocephalus:

1)	☐	puncture of the anterior horn of the lateral ventricle
2)	☑	ventriculopunction (according to A.A. Arendt) is a dosed diversion of cerebrospinal fluid from the lateral ventricle into a sealed vessel under strictly aseptic conditions
3)	☑	ventriculocisternostomy is the diversion of cerebrospinal fluid from the posterior horn of the lateral ventricle into the cerebellar cistern with extra- or intracranial conduction of a rubber or polyvinyl chloride tube
4)	☐	lumbar puncture
5)	☑	bypass surgery, which consists of creating an anastomosis between the lateral ventricle and the abdominal cavity

196. Trepanation of the mastoid process is performed in order to:

1)	☐	restoration of hearing function and balance
2)	☑	removal of pus and granulations from the air-bearing cells and the mastoid cave
3)	☑	creating a bone cavity without overhanging edges
4)	☑	drainage of the purulent cavity (with a strip of glove rubber)
5)	☐	exclusion of ear deformity

197. Possible formidable complications of trepanation of the mastoid process with deviation from the projection of the Shipo triangle:

1)	☐	damage to the cartilage and bone parts of Meatus acusticus externus
2)	☑	injury to the trunk of the facial nerve due to the expansion of the bone wound downwards and anteriorly
3)	☑	penetration into the middle cranial fossa through the tympanic wall of the tympanic cavity with upward displacement of the trepanation zone
4)	☑	damage to the sigmoid or transverse sinuses when the trepanation zone expands in the posterior-inferior direction
5)	☐	inflammation of the ceruminous (sulfur) glands