Case №1

To assess the condition of the tissues of the oral mucosa, Lugol's iodine solution is used, which is applied to the mucous membrane.

1. How can you explain that the dye stains tissues?
2. Explain why normal cells are stained with Lugol's solution, but damaged cells are not?
3. What is the difference between necrosis and apoptosis?

Case №2

To study a new dental filling material, it is necessary to experimentally model caries.

1. What are the requirements for modeling caries?
2. What animals can be used for experimental modeling of caries?
3. Why are protein-carbohydrate mixtures used to model caries? What proteins are used and why?
4. What other methods of modeling caries do you know?
5. Why won't caries develop in sterile animals?

Case N 3

Carious process consistently leads to increase permeability of enamel, then dentin damage and then – pulp death.

1. Which pathological process appear in tooth Tissue?
2. How can you differ injured cell from intact cell?
3. Explain pathogenetic mechanism of microcirculatory vessel reactions during acute inflammation.
4. Point out the preformed and new synthesized mediators which mast cells secret during acute inflammation.

Case N4

Patient 40 y.o applied to stomatology clinic for acute severe pain in right side of lower jaw.
Medical examination: body temperature 36,7°.
The doctor revealed the deep carious cavity in patient's tooth. The patient told that acute pain sensation increased when he used cold meal and drinks. Also he added that one day before intensity of pain increases and his tooth gave the reactions on sweet and spacy food. Dentist put the diagnosis:
The patient has PULPITIS.

1. Which pathological process was revealed in patient's oral?
2. Name the features that characterize this Process.
3. Which causes lead to the injury of enamel, Dentin and pulp?

Case 5

Patient G., 65 y.o., male, reported with the chief complaint of pain, swelling and ulceration on her upper lip mucosa for last 2 days. He further complained of inability to open her mouth and discomfort while chewing and swallowing of food. The dentist reveal round shape ulcerative lesion on his upper lip mucosa, around lesion mucosa was hyperemic.

1. What pathological process has this patient?
2. What etiological factors of this pathological process.
3. What signs of pathological process has this patient?
4. Explain mechanism of redness.
5. Explain mechanisms of pain.
6. Explain mechanisms of swelling.

Case 6

A 13y.o female with complains of redness, edema and pain, on the facial gingiva of the maxillary left central incisor (tooth no. 9).

1. What pathological process has this patient?
2. Explain mechanism of redness.

3. Explain mechanisms of pain.
4. Explain mechanisms of swelling.

Case 7.

Patient B., aged 22, and patient K., aged 43, were found to have fluid accumulation in the pleural cavity. Both patients underwent a pleural puncture.

Patient B.: the punctate was cloudy, of light-yellow color with a relative density 1.029, protein content 39 g/l and high activity of lactatedehydrogenase (LDG). In the sediment there were numerous formed elements, predominantly neutrophils of degenerative forms. Microbe flora was present inside and outside the cells.

Patient K.: The punctate was transparent, of light-yellow color with a relative density 1.014, protein content 16 g/l and low activity of LDG. In the sediment there was insignificant amount of cells, mostly lymphocytes.

1. What is the character of the fluid in patient B. and in patient K.? Justify your answer.
2. Describe the main differences in the fluid composition of patient B. and patient K.
3. What are possible mechanisms of fluid accumulation in the pleural cavity of these patients?
4. Describe the mechanism of leukocytes appearance at the site of inflammation.

Case 8.

In the alteration phase in the focus of inflammation there is a marked increase in highly active enzymes: elastase, collagenase, hyaluronidase, phospholipase A_2, myeloperoxidase and others.

1. Which of these enzymes induces increased formation of prostaglandins?
2. Describe the role of prostaglandins in the focus of inflammation.
3. What other inflammation mediators are formed after activation of this enzyme? List their main properties.
4. How can increased production of this enzyme be blocked?

Case 9.

Patient addressed to doctor with complaints on impairment of left eye's vision, swelling of eyelid and redness of left eye mucous, tearing, cramping of left eye. Two days ago during working in the country, foreign body got into his eye. In the morning, his eye was swollen, watery, and unable to open. During examination, eyelids are swollen, their edges were hyperemic, having purulent discharge.

1. Which typical pathological process is developed in the patient? Justify your opinion.
2. Explain the pathogenesis of mucosal redness and pus formation in the left eye.

Case 10.

A patient went to the doctor and complained that she had severe and occasionally "twitch" pain on the second finger of the right hand. Symptoms appeared on the second day after the patient did manicure and scratched her skin around the nail meanwhile she was doing manicure.

During the examination, doctor found out that her finger was swollen, especially around the nail, it appeared to be red, and hot was felt when touching. Patient complained that it is hard to bend her finger.

1. Which typical pathological process is developed in the patient?
2. What are the classical signs for this process?
3. Specify the local pain factors and explain their appearance.

Case 11.

A child accidentally touched a hot iron at forearm and cried when he felt the pain. On the skin at the site of contact occurred rapidly reddening and bubble filled with clear liquid.

1. What is the mechanism of pain in this case?
2. What is the mechanism of occurrence of mediators in the inflammation area?
3. What are the pathological reactions which can cause release of inflammatory mediators?