ÖREBRO UNIVERSITY
SCHOOL OF HEALTH AND MEDICAL SCIENCES

Examination

Medicine, Pathophysiology at Cellular Level

Course Code: MC-2005

Course Responsible: Ravi Vumma (*Mobile*: 0761666044)

Date: 2014-10-04

Examination Time: 5 Hours

Total points: 80 Points

Sort answer sheets to the following sets of questions separately

SET	Question Numbers	
1	1-4	20P
2	5-7	8P
3	8-9	8P
4	10-12	8P
5	13-15	8P
6	16-18	8P
7	19-25	20P

For Grade Good (G): **60 %** of total points

For Grade VG (VG): **85 %** of total points

NOTE:

You can answer either in Swedish or English

Write code number on each answer sheet

Write only on one side of the answer sheet

Questions of each set of questions should be answered on a separate sheet

Best of Luck

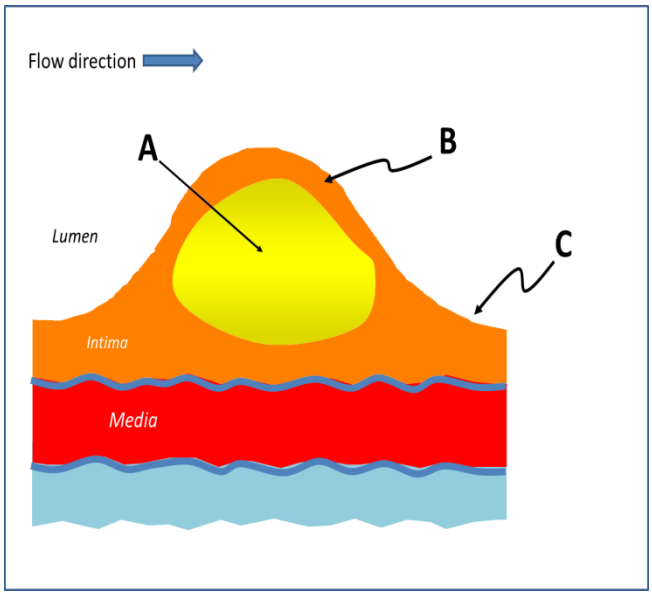
Questions

Set 1: 20P

1. Chronic obstructive pulmonary disease (COPD) actually comprises two diseases.
   a. Mention these two diseases and describe their pathogenesis! **-6P**
   b. Patients with COPD can be described as "pink puffers" or "blue bloaters". What disease do "pink puffers" or "blue bloaters" have? Compare the symptoms of these different kinds of patients by listing (at least) four pairs of symptoms that can be used to distinguish these conditions! **-4P**
2. What is the probably most important factor in the pathogenesis of toxemia of pregnancy, and describe the clinical course of this condition! **-4P**
3. What causes pelvic inflammatory disease (PID) and which events usually precede PID? **-3P**
4. Describe the course of events that results in an undescended testis! **-3P**

Set 2: 8P

5. The arterial tree consists of muscular and elastic arteries. State two muscular arteries and two elastic arteries **-2P**
6. State the names of the 3 different anatomical regions of an atherosclerotic plaque indicated in the figure (A, B, C). **-3P**
7. Describe how the monocyte/macrophage is involved in the development and progression of the atherosclerotic process **-3P**



Set 3: 8P

8. Describe the mechanism of action for a drug used in Parkinson disease? **-2 P**

9. A 53-year-old woman developed an unusual gait related to "calf stiffness." After several months of progressive weakness, she developed a right foot drop. Within 15 months, she also described difficulty in writing, weakness of the right hand and arm, and diffuse muscle twitching with painful muscle cramps. Assessment confirmed weakness of all limbs, more marked on the right side, with muscle atrophy. Reflexes were hyperactive and fasciculation's were observed in the right leg.

Within two years, the patient became severely disabled because of generalized weakness. She experienced no sensory problems, intellectual deterioration or skin breakdown in spite of her degree of immobility. Difficulty in swallowing necessitated the use of a gastrostomy tube for feeding. The patient died of respiratory failure approximately three years after reporting the initial symptoms. **-6 P**

a. What is a likely diagnosis?
b. What clinical factors make this diagnosis likely?
c. Describe the underlying pathologic changes responsible for the clinical presentation?

Set 4: 8P

10. Briefly explain the differences/similarities between malnutrition and malabsorption. **-1P**

11. Which HLA-DQ combinations increase the susceptibility to Coeliac Disease, which gluten break-down peptide/protein binds to the respective receptor subtypes, and what cellular response does this binding provoke? **-3P**

12. Which parts of the gastrointestinal tract are most commonly affected in a) Crohn's Disease compared with b) Ulcerative Colitis? **-1P**

-Regarding Crohn's Disease, which gene (product) is considered to be mainly associated with its pathogenesis, and what are the molecular/cellular mechanisms? **-2P**

-Besides genetic predispositions, which other factor(s) contributes to its development? **-1P**

Set 5: 8P

13. Describe the organization of the mucosa in the large and the small intestine **-3p**

14. What is the effect of butyrate in the human colon? **-3p**

15. Describe the function of ENS -**2P**

Set 6: 8P

16. Name 4 infectious diseases affecting lymph nodes -**2P**

17. Name 4 bacterial structural components and their functions? **-4P**

18. Name 4 common viral infections affecting humans. **-2P**

Set 7: 20P

19. Cushing's Syndrome -**4P**

a) What causes the Cushing's syndrome?

b) What are the various characteristics of Cushing's syndrome?

20. Describe the pathophysiology of diabetes insipidus -**2P**

21. Describe how hypopituitarism is caused and its major manifestations-**2P**

22. Define -**2P**

a) Dominant Inheritance b) Penetrance

23. Explain about-**4P**

a) Characteristics of Down syndrome

b) How trisomy 21 (nondisjunction) causes the Down syndrome?

24. Explain the signs and symptoms of Myasthenia Gravis and explain the role of T cells in the pathogenesis of this disease-**4P**

25. Explain the gene regulation hypothesis of Duchenne Muscular Dystrophy-**2P**
