

Topics and study materials for the 3rd credit test
General medicine
2019/2020

Cardiology, haematology, respirology

1. Cardiovascular system

- a) Physiology of the heart, cardiac cycle, pressures in the heart
- b) Congenital heart diseases, classification, causes, hemodynamic consequences, left to right shunt, right to left shunt; with cyanosis, without cyanosis.
- c) Valvular diseases, classification, etiology, hemodynamic changes; mitral; aortal.
- d) Heart failure, definition, classification, stages, compensatory mechanisms; pressure vs. volume overload, acute vs. chronic; left vs. right; backward vs. forward; diastolic vs. systolic dysfunction.
- e) Ischemic heart disease, atherosclerosis, mechanisms, risk factors; acute coronary syndrome, chronic forms of ischemic heart disease; myocardial infarction, classification, ECG diagnosis, biochemical markers.
- f) Dysrhythmias; conduction system of heart; description of action potential, ECG basic principles, causes and mechanisms of arrhythmias; classification; ECG diagnosis of dysrhythmias.
- g) Cardiomyopathy.
- h) Hypertension, mechanisms of blood pressure regulation, classification: essential vs. secondary hypertension.

Study materials

- Unit 5 Circulatory Function; Ch 17 Control of Cardiovascular Function, p. 375 – 401; Ch 18 Disorders of Blood Flow and Blood Pressure, p. 402 – 443; Ch 19 Disorders of Cardiac Function, p. 444 – 485; Ch 20 Heart Failure and Circulatory Shock, p. 485 – 512 In: Porth, C.M. (Ed.) Essentials of pathophysiology, 4rd Edition, Wolters Kluwer/Lippincot Williams & Wilkins, 2011, ISBN-13: 978-1-4511-9080-9.
- Unit IX, Ch 31 Structure and Function of the Cardiovascular and Lymphatic Systems, p. 1083 – 1128; Ch 32 Alterations of Cardiovascular Function, p. 1129 – 1193, Ch 33 Alterations of Cardiovascular Function in Children, p. 1194 – 1224;. In: McCance, K.L., Huether, S.E. (Ed.) Pathophysiology, 7th Edition, Mosby, Elsevier Inc., 2014, ISBN: 978-0-323-08854-1.
- Recommended: lectures, tutorials, data on dept. web; Other reading: pract. seminars, internet resources (Wikipedia, etc.).

2. Haematology

- a) Anaemia, classification, clinical signs, compensatory mechanisms, diagnosis, haematological values.
- b) Leukaemia, classification, etiology, clinical signs.
- c) Coagulopathy, thrombocytopenia, coagulopathies; vasculopathies, thrombophilia, thrombosis, disseminated intravascular coagulopathy.

Study materials

- Unit 3 Hematopoietic Function, Ch 11 Disorders of White Blood Cells and Lymphoid Tissues, p. 241 – 260; Ch 12 Disorders of Hemostasis, p. 261 – 276; Ch 13 Disorders of Red Blood Cells, p. 277 – 295. In: Porth, C.M. (Ed.) Essentials of pathophysiology, 4rd Edition, Wolters Kluwer/Lippincot Williams & Wilkins, 2011, ISBN-13: 978-1-4511-9080-9.
- Unit VIII, Ch 27 Structure and Function of the Hematologic System, p. 945 – 981; Ch 28 Alterations of Erythrocyte Function, p. 982 – 1007; Ch 29 Alterations of Leukocyte, Lymphoid and Hemostatic Function, p. 1008 – 1054. In: McCance, K.L., Huether, S.E. (Ed.) Pathophysiology, 7th Edition, Mosby, Elsevier Inc., 2014, ISBN: 978-0-323-08854-1.
- Recommended: lectures, tutorials, data on dept. web; Other reading: pract. seminars, internet resources (Wikipedia, etc.).

3. Respiratory system

- a) Regulation of breathing, pathological forms of breathing
- b) Respiratory failure
- c) Obstructive vs. restrictive diseases, classification, causes, clinical signs, ventilometry differences
- d) Ventilation disorders, hypo-, hyperventilation, sleep apnoea
- e) Pulmonary oedema, ARDS
- f) Pulmonary hypertension, cor pulmonale

Study materials

- Unit 6 Respiratory Function, Ch 21 Control of Respiratory Function, p. 513 – 538; Ch 23 Disorders of Ventilation and Gas Exchange, p. 565 – 598 In: Porth, C.M. (Ed.) Essentials of pathophysiology, 4th Edition, Wolters Kluwer/Lippincot Williams & Wilkins, 2011, ISBN-13: 978-1-4511-9080-9.
- Unit X, Ch 34 Structure and Function of the Pulmonary System, p. 1225 – 1247; Ch 35 Alterations of Pulmonary Function, p. 1248 – 1289. In: McCance, K.L., Huether, S.E. (Ed.) Pathophysiology, 7th Edition, Mosby, Elsevier Inc., 2014, ISBN: 978-0-323-08854-1.
- Recommended: lectures, tutorials, data on dept. web; Other reading: pract. seminars, internet resources (Wikipedia, etc.).

Composition of the test

Multiple choice (30) Approximate composition:

1. Cardiovascular system

- a) Congenital heart diseases
- b) Valvular diseases
- c) Heart failure
- d) Ischemic heart disease, atherosclerosis, acute coronary syndrome, myocardial infarction
- e) Dysrhythmias
- f) Cardiomyopathy
- g) Hypertension

2. Haematology

- a) Anaemia
- b) Leukaemia
- c) Coagulopathy

3. Respiratory system

- a) Regulation of breathing, pathological forms of breathing
- b) Respiratory failure
- c) Obstructive vs. restrictive diseases
- d) Ventilation disorders
- e) Pulmonary oedema, ARDS
- f) Pulmonary hypertension, cor pulmonale

Open questions (5) Approximate composition:

1. Dysrhythmias
2. Atherosclerosis, ischemic heart disease, angina pectoris, myocardial infarction /Valvular disorders/Congenital heart diseases/ Heart failure
3. Anemia
4. Leukemia/Coagulopathy
5. Obstructive, restrictive diseases/Respiratory failure

In multiple choice test each question consists of 5 independent choices (a-e) to which students answer by Y or N. Everyone choice is awarded by 1 point. Altogether it is possible to achieve 150 points in multiple-choice part of test. Each open question is credited by certain maxima of points, which can differ in various questions according to importance, content and difficulty (obviously 3 points and above).