DEPARTMENT OF PATHOLOGICAL PHYSIOLOGY
FACULTY OF MEDICINE, P. J. ŠAFARIK UNIVERSITY, KOŠICE

Topics and study materials for the 4th credit test
Dental medicine
2025/2026
Nervous system, endocrinology and diabetes mellitus, gastrointestinal tract, liver, and pancreas

1. Nervous system

a) Motor disorders, classification, terminology, symptomatology, lower and upper motor neuron sy., extrapyramidal disorders – hypertonic (Parkinson dis.), hyperkinetic (classification, Huntington dis.), cerebellar disorders
b) Neuromuscular disorders, Myasthenia gravis
c) Musculopthies, classification, Duchenne and Becker sy.
d) Somatosensitive disorders, classification, terminology, symptomatology, pain
e) Spinal cord injury, classification, terminology, symptomatology; spinal shock; dissociation sy., Brown-Séquard sy.
f) Neurodegenerative diseases, classification, terminology, genetic basis, inclusions diseases (taupaties, amyloidosis, Lewy bodies)
g) Dementia, classification, causes, Alzheimer disease
h) Demyelinating diseases, classification, etiopathogenesis, Multiple sclerosis
i) Epilepsy, classification, causes, symptomatology
j) Vegetative dysfunction, classification, terminology, symptomatology
k) Intracranial pressure and herniation sy., bleeding
l) Cerebrovascular stroke, ischemic, hemorrhagic

Study materials

- Unit 10 Nervous System; Ch 34 Organization and Control of Neural Function, p. 821 – 853; Ch 35 Somatosensory Function, Pain, and Headache, p. 854 – 879; Ch 36 Disorders of Neuromuscular Function, p. 880 – 915; Ch 37 Disordres of Brain Function, p. 916 – 954 In: Porth, C.M. (Ed.) Essentials of pathophysiology, 4rd Edition, Wolters Kluwer/Lippincot Williams & Wilkins, 2011, ISBN-13: 978-1-4511-9080-9.
- Unit V, Ch 15 Structure and Function of the Neurologic System, p. 447 – 1128; Ch 16 Pain, Temperature regulation, Sleep and sensory Function, p. 484 – 506, Ch 17 Alterations in Cognitive System, Cerebral Hemodynamics, and Motor Function, p.527 – 580, Ch 18 Disorders of the Central an Peripheral nervous Systems and the Neuromuscular Junction, p. 581 – 626, Ch 20 Alterations of Neurologic Function in Children; Epilepsy, p. 678 – 681. In: McCance, K.L., Huether, S.E. (Ed.) Pathophysiology, 7thEdition, 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. Endocrinology and diabetes mellitus

a) General endocrinology, classification, etiology
b) Hypothalamic-pituitary syndromes; hypo-, hyperpituitarisms – causes, symptoms; posterior, anterior pituitary syndromes
c) Thyroid disorders; hypo-, hyperthyroidism – etiopathogenesis, forms, symptoms, goiter
d) Adrenal cortex disorders; adrenocortical hypofunction – Addison´s disease – etiopathogenesis, symptoms; hypercortisolism – Cushing´s disease and syndrome - etiopathogenesis, symptoms; hyperaldosteronism – Conn´s sy. - etiopathogenesis, symptoms; congenital adrenal hyperplasia
e) Disorders of adrenal medulla
f) Parathyroid gland disorders; hypo-, hyperparathyroidism - classification, etiopathogenesis, symptoms; hormonal regulation of calcium homeostasis –incl. calcitonin, calcitriol

g) Diabetes mellitus (DM), definition, classification, symptoms, diagnosis
   - Type 1 DM – etiopathogenesis, genetic background, epidemiology, symptoms, LADA
   - Type 2 DM – etiopathogenesis, genetic background, epidemiology, symptoms, insulin resistance
   - Other types of DM – MODY
   - Gestational DM
   - Acute complications of DM – hypo- and hyperglycemic
   - Chronic complications of DM – micro- and macrovascular

Study materials

- Unit 9 Endocrine system; Ch31 Mechanisms of Endocrine Control, p. 753 – 766; Ch32 Disorders of Endocrine Control of Growth and Metabolism, p. 767 – 792; Ch33 Diabetes Mellitus and the Metabolic Syndrome, p. 793 – 820 In: Porth, C.M. (Ed.) Essentials of pathophysiology, 4rd Edition, Wolters Kluwer/Lippincot Williams & Wilkins, 2011, ISBN-13: 978-1-4511-9080-9.
- Unit VI Ch21 Mechanisms of Hormonal Regulation, p. 689 – 716; Ch22 Alterations of Hormonal Regulation, p. 717 – 767 In: McCance, K.L., Huether, S.E. (Ed.) Pathophysiology, 7thEdition, 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. Gastrointestinal tract, liver, pancreas, gall bladder

a) Disorders of oral cavity, caries, periodontitis, infections, precanceroses, cancers in oral cavity, manifestation of systemic diseases in oral cavity
b) Disorders of esophagus, dysphagia, gastroesophageal reflux disease
c) Peptic ulcer, classification, etiology, symptoms, complication; gastric vs. duodenal ulcer
d) Inflammatory bowel diseases, classification, etiopathogenesis, symptoms; Crohn´s disease, ulcerative colitis
e) Intestinal motility disorders, classification, etiopathogenesis, symptoms; diarrhea, constipation, irritable bowel syndrome
f) Malabsorption and maldigestion, classification, etiopathogenesis, symptoms; specific disorders of nutrient absorption and digestion; Celiac disease
g) Exocrine pancreas disorders; acute and chronic pancreatitis, pancreatic insufficiency
h) Liver disorders; hyperbilirubinemia, jaundice – classification, etiology, clinical signs; acute and chronic viral hepatitis; hepatic insufficiency - classification, etiology, clinical signs, hepatic encephalopathy, and coma. liver cirrhosis, ascites, portal hypertension
i) Disorders of gallbladder and bile ducts, gallstones

Study materials

- Unit 8 Gastrointestinal and Hepatobiliary Function Ch 28 Structure and Function of the Gastrointestinal system, p. 675 – 695; Ch29 Disorders of the Gastrointestinal Function, p. 696 – 723; Ch30 Disorders of Hepatobiliary and Exocrine Pancreas Function, p. 724 – 752 In: Porth, C.M. (Ed.) Essentials of pathophysiology, 4th Edition, Wolters Kluwer/Lippincot Williams & Wilkins, 2011, ISBN-13: 978-1-4511-9080-9.
- Unit XII, Ch40 Structure and Function of the Digestive System, p. 1393 – 1422; Ch41 Alterations of Digestive Function, p. 1423 – 1485 In: McCance, K.L., Huether, S.E. (Ed.) Pathophysiology, 7thEdition, 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.).

4. Oral cavity

a) Salivary glands
b) Lymphadenopathies
c) Gum diseases

Study materials

- https://patfyz.medic.upjs.sk/estudmat/DM-N01-Patofyziol%C3%B3gia%20%C3%BAstnej%20dutiny%20II-biele-%C4%8Derven%C3%A9%20l%C3%A9zie-m%C3%A4kk%C3%A9%20tkaniv%C3%A1-2026-2-25_version2.pdf
- Recommended: tutorials from practical seminars, internet resources (Wikipedia, etc.)

Composition of the test

Multiple choice (25). Approximate composition:

1. Nervous system
   a) Motor disorders, extrapyramidal, cerebellar disorders
   b) Neuromuscular disorders, musculopathies
   c) Somatosensitive disorders, pain
   d) Spinal cord injury, spinal shock, Brown-Séquard sy.
   e) Neurodegenerative diseases
   f) Dementia, classification, Alzheimer disease
   g) Demyelinating diseases, Multiple sclerosis
   h) Epilepsy
   i) Vegetative dysfunction
2. Endocrinology and diabetes mellitus
   a) General endocrinology, classification, etiology
   b) Hypothalamic-pituitary syndromes
   c) Thyroid disorders
   d) Adrenal cortex disorders; Addison´s disease, Cushing´s disease and syndrome, Conn´s sy., congenital adrenal hyperplasia
   e) Disorders of adrenal medulla
   f) Parathyroid gland disorders
   g) Diabetes mellitus, type 1 DM, type 2 DM, other types of DM, gestational DM, acute and chronic complications
3. Gastrointestinal tract, liver, pancreas, gall bladder
   a) Disorders of oral cavity, pharynx and esophagus
   b) Peptic ulcer
   c) Inflammatory bowel diseases
   d) Intestinal motility disorders, diarrhea, constipation, irritable bowel syndrome
   e) Malabsorption and maldigestion
   f) Exocrine pancreas disorders
   g) Liver disorders
   h) Disorders of gallbladder and bile ducts
4. Oral cavity
   a) Gums disease
   b) Lymphadenopathies
   c) Salivary glands

Open questions. Approximate composition:

a) Motor disorders, extrapyramidal, cerebellar disorders
b) Neuromuscular disorders, musculopathies
c) Spinal cord injury, spinal shock, Brown-Séquard sy., dissociation syndromes
d) Multiple sclerosis
e) Epilepsy
f) Stroke, intracranial pressure, and herniation sy.
g) Neurodegenerative diseases
h) Dementia
i) Vegetative dysfunction
j) Hypothalamic-pituitary syndromes

k) Thyroid disorders
l) Adrenal cortex disorders
m) Disorders of adrenal medulla
n) Parathyroid gland disorders
o) Diabetes mellitus, type 1 DM, type 2 DM, other types of DM, gestational DM, acute and chronic complications
p) Disorders of oral cavity, pharynx and esophagus
q) Peptic ulcer
r) Intestinal motility disorders, diarrhea, constipation, irritable bowel syndrome
s) Malabsorption and maldigestion
t) Exocrine pancreas disorders
u) Liver disorders
v) Disorders of gallbladder and bile ducts
w) Case study from neural system
x) Case study from oral cavity

In the multiple choice test each question consists of 5 independent choices (a-e) to which students answer by Y or N (Yes/No). Every one choice is awarded by 1 point. Altogether it is possible to achieve 150 points in the multiple-choice part of the test.
Each open question is credited with certain maxima of points, which can differ in various questions according to importance, content and difficulty.

Test rating grade - %
A - 100 - 91
B - 90 - 84
C - 83 - 75
D - 74 - 68
E - 67 - 60
Fx - 59 and less

27 April 2026

prof. MUDr. Mária Pallayová, PhD.
Head of Department