

Interuniversity Progress Test for Medicine



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INSTRUCTIONS FOR ANSWERING QUESTIONS

The consequences of not obeying these instructions are your own responsibility.

- Always check whether there are any pages missing from the test booklet.
- **Use only a soft pencil** (HB) on the answer form. Never use other colours or writing materials.
- Answer *every* question by carefully **colouring in** the corresponding box on the answer form (colour in the whole box, do not check it). Do not write outside the box.
Example:
- To correct an **incorrect answer**, erase it and colour in your new choice.
- **Answer every question with one answer only.** Never colour in more than one box for one question. If you do not know the answer, choose the **question mark**. Do not make any changes to the answer form or add notes. Any marks, folds or damage to the answer form will make it impossible to process. If you disregard the instructions and answer questions improperly or unclearly, so that there is doubt as to what answer you have given, or if you select an answer that does not exist, the answer will be invalid and the question concerned will be regarded as 'unanswered'. Ask the invigilator for a new answer form if necessary.
- First fill in your name and colour in your student number carefully.
- Some students opt to note their answers to the test questions in the test booklet first, then copy them to the answer form. You should realize that this could result in your running out of time or making mistakes when copying. Any consequences are your own responsibility.
- Each question comprises a stem followed by one or more items: the stem is intended as a statement of fact and always contains correct information. The aim of the test designers has been to formulate questions as unambiguously as possible. Vague words ('sometimes', 'often') are specified where necessary, which can result in somewhat artificial sentence constructions. It is not the aim to set trick questions.
- Despite extensive evaluation of questions before they are included in a progress test, imperfections cannot be entirely prevented. The progress test evaluation committee wishes to be informed of errors in the content of questions and of questions with ambiguous or multi-interpretable formulations. Students are therefore invited to submit their comments. All comments are reviewed by the Interfaculty Progress Test Evaluation Committee (IVBC). The Committee's findings and conclusions are documented and, if required, discussed with the discipline(s) concerned. This can result in removal of questions from the definitive test (cancelled questions) or in changes in answer keys (key change). When multiple answers are good, the question is not a valid part of the progress test and will be removed.

You can only submit comments on interuniversity progress test questions through the **website <http://ivtg.nl/>, no later than 4 p.m. on the Thursday following the Progress Test.** Comments that surrendered elsewhere is irrelevant and / or does not meet the guidelines will not be considered. Follow the instructions on the site

PLEASE FIRST READ THE INSTRUCTIONS ON THE PREVIOUS PAGE

- *You are not allowed to use your own paper to make notes. Instead, you may use the empty pages at the end of this test.*
- *You can take the test booklet from 10.30 a.m.*

From this test you can only submit your comments on interuniversity progress test questions through the website <http://ivtg.nl/> Elsewhere submitted comments will not be accepted.

Circumduction of the right leg when walking is consistent with a disorder of the:

1. A. left basal ganglia
B. left internal capsule
C. right cerebellum

A 63-year-old patient has renal failure. What finding in this case suggests a prerenal form of renal failure?

2. A. dysmorphic erythrocytes in the sediment
B. fractional excretion of sodium <1%
C. relatively low urea concentration in the serum compared with creatinine

A patient has symmetrical circumscribed erythematous papulosquamous lesions of varying sizes on the extensor side of the extremities. The most likely diagnosis is:

3. A. atopic eczema
B. dermatomycosis
C. lichen ruber planus
D. psoriasis vulgaris

A 52-year-old woman has an unpleasant tickly dry cough. If it is decided to give drug treatment the most effective option is:

4. A. acetylcysteine
B. codeine
C. salbutamol
D. tiotropium

If a patient feels tingling in the hands the day after total thyroidectomy he probably has:

5. A. hypocalcaemia
B. hypokalaemia
C. hypomagnesaemia

The pathophysiological mechanism of lactose intolerance is:

6. A. allergy
B. chronic constipation
C. enzyme deficiency

A seven-year-old boy gets out of bed screaming every night. His parents disagree vehemently on how to tackle the problem. The therapist targets his interventions at the way in which the parents communicate with each other about problems in general. This approach is typical of:

7. A. client-centred therapy
- B. behavioural therapy
- C. family therapy

In healthy young men the average vital capacity of the lungs is:

8. A. 3,000 ml
- B. 4,500 ml
- C. 6,000 ml

In isolated complete failure of the right trigeminal nerve (V):

9. A. one of the corners of the mouth droops
- B. the side of the tongue is numb on one side
- C. there is impaired sense of taste
- D. the right eye cannot be closed

Which test is LEAST worthwhile in a case of multiple sclerosis?

10. A. testing fields of view
- B. electromyography
- C. spinal cord MRI
- D. sensory evoked potentials

The set-point theory of obesity is that:

11. A. overweight people regulate their eating behaviour so as to maintain higher than average weight
- B. overweight people tend to set themselves unrealistic targets for their weight
- C. overweight people do not produce enough leptin
- D. overweight people are hypersensitive to environmental stimuli during meals

In healthy adults the average 24-hour urine production is closest to:

12. A. 300 ml
- B. 600 ml
- C. 1,200 ml
- D. 2,400 ml

In COPD (chronic obstructive pulmonary disease) additional muscles are sometimes used to support breathing. One of these is the:

13. A. erector spinae iliocostalis muscle
- B. anterior scalene muscle

Breathing is closely involved in the regulation of blood pH. In a case of metabolic acidosis the respiration rate:

- 14. A. goes up
- B. goes down

Worldwide over 70% of all cases of blindness and visual impairment are caused by conditions that can be treated effectively or prevented. The most prevalent cause of this treatable or avoidable blindness and visual impairment worldwide is:

- 15. A. cataract
- B. corneal clouding
- C. diabetic retinopathy
- D. glaucoma

The main stress-related mental health disorders are burnout and post-traumatic stress disorder (PTSD). What is the main distinction between these two disorders?

- 16. A. anxiety and depression are worse in the case of PTSD
- B. the concentration impairments are worse in the case of burnout
- C. nightmares or vivid memories are more common or worse in the case of PTSD
- D. avoidance reactions figure more prominently in burnout

A 23-year-old woman with a history of asthma has severe dyspnoea with expiratory wheezing. The physician diagnoses asthma exacerbation. Which of the following drugs is the treatment of choice initially?

- 17. A. beta-2 sympathomimetic by tube-spacer aerosol
- B. inhaled corticosteroid by tube-spacer aerosol
- C. beta-2 sympathomimetic injection
- D. corticosteroid injection

Job, an 18-month-old boy, started walking six months ago. His father is worried because Job always walks on his toes. He can put his heel on the ground when asked. Up to what age is watchful waiting permitted in the case of this phenomenon?

- 18. A. 18 months
- B. two years
- C. three years

Inversion trauma of the ankle is a common sports injury. What in particular is damaged?

- 19. A. collateral medial ligament
- B. anterior talofibular ligament

Hallucinations are a symptom of schizophrenia. What is meant by hallucination?

20. A. abnormal observation of an external object
B. a sensation perceived as sensory although the sense organ is not receiving any external stimulus
C. incorrect interpretation of an external object
D. a fundamental personal conviction at odds with reality that cannot be corrected

What is the main transmitter involved in presynaptic inhibition in the brain?

21. A. acetylcholine
B. adrenaline
C. dopamine
D. GABA

The two lobes of the left lung are separated by a fissure. Which one?

22. A. oblique fissure
B. horizontal fissure
C. vertical fissure

A young girl with negroid skin pigmentation (skin type VI) has had her ear lobes pierced. Two months later, firm, round, skin-coloured tumours with a diameter of approx. 1 cm have developed in both ear lobes. What is the diagnosis?

23. A. atheromatous cyst
B. telangiectatic granuloma
C. keloid
D. sarcoidosis

Of which type of rapidly progressive glomerulonephritis is Goodpasture's syndrome an example?

24. A. Type I (anti-GBM antibody)
B. Type II (immune complex)
C. Type III (pauci-immune)
D. Type IV (other)

The right renal artery runs from the aorta to the renal hilum, crossing a dorsal muscle on its way. Which one?

25. A. iliac
B. psoas major
C. quadratus lumborum
D. transversus abdominis

Ulcer of the lower limb above the lateral malleolus is found in a 52-year-old patient. Given the site, what is the most likely cause in this case?

26. A. arterial insufficiency
B. diabetes
C. thromboangiitis obliterans
D. venous insufficiency

An intracerebral haemorrhage in the temporal lobe can cause severe swelling of the brain. What is the worst danger threatening the patient?

27. A. subfalcine herniation
B. tonsillar herniation
C. transtentorial herniation

A 72-year-old woman has a lot of pain in her right chest and back. A skin abnormality with blisters and crusting is visible in the area of thoracic dermatomes 2 and 3. What infection is this most likely to be?

28. A. primary herpes simplex virus 1 infection
B. reactivation of herpes simplex virus 1
C. primary varicella zoster virus infection
D. reactivation of varicella zoster virus

Excess pleural fluid causes an anatomical respiratory obstruction. This fluid is produced by:

29. A. alveolar squamous epithelium
B. cylindrical bronchial epithelium
C. pleural mesothelium

A mother calls the GP about her three-year-old son, who has had watery diarrhoea for the past two days. He is otherwise in good health and is not feverish. He is not vomiting and he is drinking well. The GP decides that this is a case of uncomplicated acute diarrhoea. What is the best advice according to the NHG guideline on Acute Diarrhoea?

30. A. it is important to drink more than usual and in small amounts
B. it is important to stop eating and drinking for a while to give the intestines a rest
C. it is important to ensure that the child gets some calories inside him by drinking such things as milk and apple juice
D. it is important to start him on loperamide to stop the diarrhoea

A man has Alzheimer's disease and is in a nursing home. When he develops severe pneumonia his daughter asks the geriatric consultant to stop treating her father with antibiotics, as he had always said that he did not want to be kept alive if he were to end up in a nursing home with dementia. Given the patient's wishes, how can the daughter's decision be characterized?

31. A. she is carrying out her father's decision (advance directive)
B. she is taking the decision that she thinks he would have taken himself if he had been capable of doing so (his presumed wishes)
C. she is judging what is in his best interests and basing her conclusion on that (representing his interests)

Rheumatoid arthritis is a chronic inflammatory condition that can eventually cause damage to the joints. Which part of the joint is affected first?

32. A. bone
B. cartilage
C. capsule
D. synovium

A 14-year-old girl goes to her GP asking for the contraceptive pill. She asks the GP not to inform her parents. 'They would freak out if they heard about it. But I really love my boyfriend and we would like to sleep together.' Based on what reason should the GP inform or not inform the parents of the girl's request?

33. A. her parents must be informed, because the girl is still a minor
B. her parents must not be informed, because the girl has expressly asked for them not to be informed

In January a seven-month-old girl is brought to Accident & Emergency by her parents with shortness of breath. Her respiration is rapid and there is distinct nasal flaring, as well as signs of cyanosis. Wheezing rhonchi are audible over both lungs. What is the most likely diagnosis?

34. A. acute bronchitis
B. bronchiolitis
C. influenza
D. cold

A 65-year-old woman has been complaining of increasing fatigue and bone pain in her spinal column for a few months. According to her daughter she is also confused, but she has not lost weight and is not feverish. There is throbbing and axial pain in a number of vertebrae. The results of the blood tests are as follows: low Hb; elevated ESR (>100 mm); elevated alkaline phosphatase; elevated serum CA. Which of the following conditions is most likely?

35. A. amyloidosis
B. multiple myeloma
C. non-Hodgkin's lymphoma
D. osteoporosis

A 47-year-old man with lobar pneumonia may have sepsis. Conclusive evidence of sepsis is a positive:

36. A. blood culture
B. serology result
C. sputum culture

A 21-year-old woman is dissatisfied with her personal appearance. When she was 13 a boy with whom she was in love laughed at her, calling her 'beetroot' because she blushed. She now spends three hours a day looking in the mirror, noticing small red patches and bumps on her face. She no longer dares to take part in tutorials because of insecurity about the way she looks, and she has therefore had to abandon her studies. She gets out less and less because of the problem. When she does go out it is only after she has made up her face very carefully. On examination the psychiatrist finds a young woman with no peculiarities worthy of mention in her appearance. What is the most likely diagnosis?

37. A. conversion disorder
B. depression
C. body dysmorphic disorder
D. somatization disorder

A 53-year-old smoker complains of a chronic cough following a bout of pneumonia. He expectorates purulent sputum. 'Tram tracks' are visible on his chest X-ray. What is the most likely diagnosis?

38. A. bronchiectasis
B. chronic bronchitis
C. cystic fibrosis

A 64-year-old woman is having an enlarged uterus removed. Pathological tests reveal a benign tumour in the uterine wall originating in the smooth muscle tissue. Which of the following statements best describes the tumour?

39. A. an uncircumscribed tumour with cytonuclear atypia
B. a circumscribed tumour made up of bundles of cells with the occasional mitosis
C. a rapidly dividing tumour with infiltration into the blood vessels (angioinvasive growth)

The motor system has central motor neurons and peripheral motor neurons. The general term 'peripheral motor neuron' refers to the motor neurons. The cell bodies of these motor neurons are found mainly in the:

40. A. precentral gyrus
B. anterior horn of the spinal cord

A 49-year-old patient has a severe headache that came on suddenly and spontaneously, with photophobia and a stiff neck. The CT scan of the cerebrum shows subarachnoid blood. What is the most likely cause?

41. A. amyloid angiopathy
B. aneurysm originating in the cerebral arterial circle
C. subarachnoid arteriovenous malformation

In the Netherlands pyoderma is usually caused by:

42. A. *Candida albicans*
B. *Escherichia coli*
C. *Haemophilus influenzae*
D. *Staphylococcus aureus*

An andrological examination is carried out on a 42-year-old man. The testes are oval in shape and feel smooth, firm and elastic to palpation. The left testicle is 7 cm long with a volume of approx. 40 ml, the right testicle is 5 cm long with a volume of approx. 20 ml. Based on these findings, which of the following conclusions should the andrologist draw?

43. A. abnormal: the left testicle is enlarged
B. abnormal: the right testicle is too small
C. abnormal: the testes should be round
D. abnormal: the testes should feel soft to the touch
E. normal: no abnormalities

For the past few months a 19-year-old student has had many different sexual partners and has not always used a condom. He goes to the GP with painful lesions on his penis. What is the most likely diagnosis?

44. A. genital herpes
B. syphilis
C. *Trichomonas*

What effect does an obsession or acting on a compulsion have on anxiety?

45. A. an obsession reduces anxiety and acting on a compulsion increases anxiety
B. an obsession increases anxiety and acting on a compulsion reduces anxiety
C. an obsession and acting on a compulsion both reduce anxiety
D. an obsession and acting on a compulsion both increase anxiety

Ranitidine is a drug used to treat hyperacidity. It is a(n):

46. A. H₂ receptor antagonist
B. mucosal protective
C. proton pump inhibitor
D. acid-neutralizing drug

A 65-year-old man who has been treated for high blood pressure with hydrochlorothiazide and an ACE inhibitor for many years is referred to a cardiologist with exertion-related shortness of breath. On physical examination his blood pressure is 145/90 mmHg and heart rate 85 bpm. A third heart sound is audible over the heart and traces of basal crepitations over the lungs. The chest X-ray shows slight redistribution with a few Kerley B lines. Which of the following drugs should preferably be added to his medication?

47. A. angiotensin receptor blocker
B. beta-blocker
C. calcium antagonist
D. coumarin derivative

Patients with C1 esterase inhibitor deficiency (C1 inhibitor deficiency) have a shortage of the protein that inhibits activation of the first component of complement. What is the most common clinical presentation caused by this deficiency?

48. A. coagulation disorders
B. hereditary angioedema
C. immunodeficiency
D. SLE

Which statistical test is most appropriate to compare the average weight of a group of obese men before and after going on a diet?

49. A. chi-square test
B. paired t-test
C. log rank test
D. two-sample t-test

In patients suffering from thalassaemia the amount of oxygen released from the blood into the tissues is low. The low amount of oxygen released is the result of:

50. A. abnormal haemoglobin in the blood
B. increased CO₂ in the blood
C. reduced blood 2,3-diphosphoglycerate concentration
D. reduced erythrocyte count

A 32-year-old man is unable to engage in strenuous exertion without muscle cramps. When tested during maximum exertion he is found not to be producing any lactate. He is most likely to have a deficiency of:

51. A. fructose 1,6-bisphosphate
B. glycogen phosphorylase
C. pyruvate dehydrogenase

Testosterone plays a role in differentiating embryonic structures. In the absence of testosterone the Müllerian (paramesonephric) ducts develop into what, among other organs?

52. A. uterus
B. vulva
C. ovary

What is a main symptom of Parkinson's disease?

53. A. atrophy
B. hypotonia
C. rigidity
D. spasticity

In its ethics the profession has traditionally applied certain general rules that could provide a guide to a medical code of conduct. Which of the rules below is LEAST suited to this?

54. A. respect for life
B. in dubio abstinence
C. practise what you preach
D. primum non nocere

A certain percentage of Dutch adults with no gastric problems are nevertheless found to have antral gastritis caused by *Helicobacter pylori*. This percentage is closest to:

55. A. 5
B. 15
C. 25
D. 35

In which of the following cases is BCG vaccination contraindicated?

56. A. breastfeeding
B. COPD
C. heart failure
D. HIV

A 78-year-old woman with urosepsis dies. The autopsy shows myocardial infarction with no thrombus in the coronary arteries. This is most likely to be a:

57. A. subendocardial infarction
B. transmural infarction

In what phase of the menstrual cycle is the blood progesterone level highest?

58. A. luteal phase
B. menstruation
C. proliferative phase

Fluorescein strips are used to examine the cornea. The cornea will be stained by the fluorescein if:

- 59. A. there is increased corneal curvature
- B. there is corneal oedema
- C. the corneal epithelium is damaged

What effect does adrenaline (epinephrine) have on a healthy trial subject when administered intravenously at the lowest dosage that has an effect?

- 60. A. it raises systolic blood pressure through beta-2 receptor stimulation in the left ventricle
- B. it lowers heart rate by stimulating the beta-1 receptors in the SA node
- C. it lowers peripheral resistance by stimulating the beta-1 receptors on the smooth muscle cells in the vascular wall
- D. it lowers peripheral resistance by stimulating beta-2 receptors, particularly in the vascular beds of skeletal muscles

A GP examines a patient's abdomen in the correct manner, with the patient in supine position. Which of the following findings is most consistent with ascites?

- 61. A. depressed navel
- B. stomach rumbling
- C. tympany in the flanks
- D. undulation

When furosemide is administered it causes a hormonal change in the plasma. Which of the following changes is present in most cases?

- 62. A. decreased aldosterone level
- B. decreased noradrenaline level
- C. increased atrial natriuretic peptide (ANP) level
- D. increased renin level

A distinction is made between striated and smooth muscle tissue. Which type of muscle tissue does the internal sphincter of the anus comprise?

- 63. A. striated muscle tissue
- B. smooth muscle tissue

An 84-year-old woman has been completely bed-ridden for a week with terminal breast cancer. The physician visits her to examine a skin discolouration on both heels. On inspection there is redness on both heels that disappears when pressed. This is a case of:

- 64. A. grade one pressure ulcers
- B. grade two pressure ulcers
- C. grade three pressure ulcers
- D. not pressure ulcers

The indications for influenza vaccination have been laid down by the Minister of Health, Welfare and Sport based on the advice of the Health Council. To which of the following target groups is influenza vaccination offered on the recommendation of a physician?

65. A. babies under the age of six months
B. children with cow's milk allergy
C. people aged 60+
D. pregnant women

Indicate the correct order of the processes taking place in the tissue while a bone fracture is healing:

66. A. inflammation, soft callus, hard callus, remodelling
B. inflammation, soft callus, remodelling, hard callus
C. soft callus, inflammation, hard callus, remodelling
D. soft callus, inflammation, remodelling, hard callus

Which of the following neoplasms is closely associated with Epstein-Barr virus?

67. A. bronchial carcinoma
B. carcinoid tumour of the lung
C. extramedullary plasmacytoma
D. laryngeal papilloma
E. nasopharyngeal carcinoma

A cystic nuchal hygroma is a:

68. A. congenital dysfunction of the lymphatic system
B. consequence of neck lymphadenopathy
C. remnant of a gill slit

A mother brings her eight-year-old daughter to a paediatric surgery because she is too small for her age according to the child health centre. Her height for age is in parallel with the -2.5 SD curve, well below the target area. Her weight for height follows the -1 SD curve and her cranial circumference the 0 SD curve. The girl has a clean medical history, with no disproportion or dysmorphic features. Which syndromal cause of the short stature nevertheless needs to be ruled out?

69. A. Klinefelter's syndrome
B. Marfan's syndrome
C. Sotos syndrome
D. Turner syndrome

A woman is a chronic pain patient going to a physiotherapist. She has constant lower back pain and is scared that it will get worse if she does the exercises prescribed by the physiotherapist. The physiotherapist tells her 'use it or lose it'; the patient says 'my bones are worn out and the exercises only make them wear out faster'. The patient's statement is a good example of which psychological reaction?

70. A. denial
B. desensitization
C. dysfunctional cognition
D. generalized anxiety

Red blood cell formation takes place in different organs during the successive stages of life. Where in the foetus does it mainly take place during the first trimester of pregnancy:

71. A. bone marrow
B. yolk sac
C. liver
D. spleen

A 53-year-old man has had a progressive cough for over a year, usually unproductive. On one occasion he expectorated a trace of blood, which made him go to the doctor. He hasn't been feeling at all well recently. He has smoked one pack of cigarettes a day since the age of 16. Physical examination shows an obese man. Inspection of the thorax reveals symmetrical movement in both halves; resonant percussion is found over both lung fields, and attenuated vesicular breath sounds are audible over both lung fields on auscultation. Which of the above findings obtained from the history or physical examination is indicative of a serious cause (a red flag)?

72. A. feeling unwell for some time
B. one-off expectoration of blood
C. resonant percussion over both lung fields
D. attenuated breath sounds on auscultation

Which research design produces the highest form of evidence of the effect of a treatment?

73. A. case-control study
B. case report study
C. follow-up study
D. randomized clinical trial

Various aspects are considered when examining a breast for a suspected tumour. Which finding is specifically indicative of a T4 tumour?

74. A. fixation to the chest wall
B. redness of the breast
C. tumour larger than 5 cm

Internal systems are activated as a result of a biological or psychological imbalance caused, for example, by an inflammatory process. Which of the following systems is activated as a result of an imbalance?

75. A. cytokine receptors in the central nervous system
B. oxytocin receptors in the pituitary gland
C. melatonin receptors in the pituitary gland
D. serotonin receptors in the central nervous system

A two-year-old Moroccan boy is brought by his parents to the outpatients' clinic. He is the first child of consanguineous parents. The father says his son was born in Morocco and has been living in the Netherlands for three months. He has severe psychomotor retardation and is hyperactive. On examination he is found to have tremor, pyramidal signs manifested in mild spasticity and microcephaly. He has a musty odour, a sort of mousy smell. What is the most likely diagnosis?

76. A. biotinidase deficiency
B. congenital hypothyroidism
C. phenylketonuria
D. medium-chain acyl-CoA deficiency

When testing a patient's pupil reactions to light, the ophthalmologist sees both pupils narrowing to the same extent when light is shone into the right eye. There is less pupil narrowing in both eyes when light is shone into the left eye. Which type of pupil defect is this and in which eye?

77. A. afferent pupil defect in the right eye
B. efferent pupil defect in the right eye
C. afferent pupil defect in the left eye
D. efferent pupil defect in the left eye

Glycogen is in plentiful supply in the body and is used to maintain blood glucose at the correct level. When fasting, a healthy person's glycogen supply is sufficient for approximately:

78. A. half a day
B. one-and-a-half days
C. three days

The father of a seven-year-old boy phones the GP's assistant, as his son has been coughing for two days and has high fever and earache. Last night he heard him wheezing. The main reason for the GP to see the boy today is the:

79. A. duration of the fever
B. height of the fever
C. wheezy breathing
D. earache

A 34-year-old woman presents at A&E with malaise and cloudy urine. Physical examination reveals left costovertebral angle tenderness. These findings are most consistent with:

80. A. cystic kidneys
B. glomerulonephritis
C. renal failure
D. pyelonephritis

A 58-year-old woman undergoes surgery for inguinal hernia. A string-like structure is found in the inguinal canal. If it is not part of the hernia contents, which ligament is it?

81. A. broad ligament of the uterus
B. proper ovarian ligament
C. suspensory ligament of the ovary
D. round ligament of the uterus

A GP examines a 14-year-old girl with cervical lymphadenopathy and fatigue. She went through a period of sore throat and fever two weeks ago. There are no night sweats or weight loss. The blood picture shows leukocytosis with an elevated atypical lymphocyte count. The most likely diagnosis is:

82. A. ethmoiditis
B. mastoiditis
C. meningitis
D. sinus thrombosis

A 78-year-old woman has severe pain and stiffness in the shoulders which came on quickly. She feels unwell and has a body temperature of 38°C. Passive shoulder movement is unaffected. There is pain at the extreme ranges of motion on active movement. Comprehensive blood tests show only highly elevated sedimentation and mild normocytic anaemia. The best treatment in this case is:

83. A. antibiotics
B. physiotherapy
C. prednisone

Some urological conditions are related to sex in a particular way. Ureterocele is:

84. A. equally common in women and men
B. more common among men than among women
C. more common among women than among men

A 36-year-old patient has had axillary eruption for some weeks. Physical examination reveals a brownish-red, fairly well circumscribed exanthema with no clear scaling at the edges. One of the conditions on the differential diagnosis list is erythrasma. What is the supplementary test of choice in this case?

85. A. bacterial skin culture
B. biopsy for histopathological investigation
C. KOH test of skin flakes after degreasing the skin with petroleum ether
D. examination under Wood's light

Two sisters are trying to get pregnant for the first time. One is 30 years old, the other 35. Both of them have a regular menstrual cycle and have intercourse about twice a week. Their partners are both 30 years old and have clean medical histories. In the above scenario, what are their respective monthly chances of a pregnancy leading to a live birth?

86. A. the 30-year-old woman's is the same as the 35-year-old woman's
B. the 30-year-old woman's is 50 percent higher than the 35-year-old woman's
C. the 30-year-old woman's is twice as high as the 35-year-old woman's

We receive one paternal and one maternal allele from each gene. Imprinting occurs in approximately one percent of our genes, causing changes in gene function. The mechanism underlying this change in gene function is:

87. A. modification in the DNA or histones
B. mutation in the gene or its promoter
C. polymorphism

A 32-year-old man has had a painful, diffuse red eye for a few days. He says it feels as if he has something in his eye, and his vision in the right eye is less than normal. He had this before, a year ago. Examination reveals normal pupil reactions. Right visual acuity is impaired. There is mild diffuse hyperaemia of the conjunctiva, and the corneal sensitivity of the right eye is reduced. What is the most likely cause?

88. A. acute glaucoma
B. conjunctivitis
C. keratitis
D. iritis

In which part of the kidney are sodium-glucose transporters (SGLTs) found?

89. A. proximal tubular cells
B. descending loop of Henle
C. ascending loop of Henle
D. distal tubular cells

A 1997 study of over 4,000 adults with no prior history of schizophrenia looked at whether they had ever used cannabis. All the subjects were checked in 2000 to see whether they had developed schizophrenia. The study found that the risk of schizophrenia was over three times higher in those who had used cannabis at one time or another, compared with those who had never used it. Which epidemiological research design was used here?

90. A. cross-sectional study
B. randomized controlled study
C. patient-control study
D. prospective cohort study

A 42-year-old woman suffers from recurrent unexpected panic attacks. They frighten her so much that she hardly dares go out of the house any more, for fear of having a panic attack while she is out. The GP decides to prescribe medication. A common initial choice is benzodiazepine. What is the additional drug treatment of choice?

91. A. beta-blocker
B. monoamine oxidase inhibitor
C. selective serotonin reuptake inhibitor
D. tricyclic antidepressant

In central diabetes insipidus the osmolarity of the first morning urine is ... compared with the normal range:

92. A. normal
B. elevated
C. reduced

A GP pays a home visit to a 39-year-old man whom she diagnosed with lumbosacral radicular syndrome at L5-S1 left five weeks ago. A conservative approach with pain relief had been adopted. Which of the following findings in the progression of the condition now warrants referral to a neurologist?

93. A. positive left-sided SLR result
B. impaired left Achilles tendon reflex
C. impaired left patellar reflex
D. impaired sensation in the saddle area

The term 'thalassaemia' refers to a heterogeneous group of hereditary anaemias. Alpha thalassaemia is characterized by:

94. A. deletions in the gene
B. point mutations in the gene
C. inversions in the gene
D. amplifications of the gene

Which of the following factors is very likely to cause an increase in both renal blood flow and glomerular filtration rate (GFR)?

95. A. dilation of the efferent arterioles
B. dilation of the afferent arterioles
C. increased plasma colloid osmotic pressure
D. increased activity of the renal sympathetic nerve

In the load/loadability model the development of work-related mental health disorders is attributed to an imbalance between the demands placed on an employee and his or her ability to meet those demands. How is this imbalance referred to in decision-making models for absenteeism? As:

96. A. absenteeism urge
B. absenteeism threshold
C. absenteeism opportunity
D. absenteeism necessity

A healthy student almost oversleeps on the morning of the IPTM. He sets off to the examination room on an empty stomach. He reckons he has done outstandingly well in the test, so immediately afterwards he gets down to some serious drinking with some friends. After a few hours in the pub he suddenly feels unwell and loses consciousness. Soon afterwards he finds himself in A&E, where his blood sugar level is found to be far too low. Which of the following metabolic explanations is most likely?

97. A. inhibition of gluconeogenesis
B. inhibition of glycogenolysis
C. inhibition of glycolysis
D. inhibition of oxidative phosphorylation

After splenectomy there is a risk of overwhelming infection. Infections that progress in this way are LEAST common in people who have undergone splenectomy for:

98. A. autoimmune haemolytic anaemia
B. hereditary spherocytosis
C. idiopathic thrombocytopaenic purpura (ITP)
D. traumatic spleen injury

A 72-year-old woman developed acute pain in her right knee after a strenuous walk earlier in the week. Her knee is swollen and her body temperature is 38.9°C. Infectious arthritis is suspected, so needle aspiration is carried out. The synovial fluid shows calcium pyrophosphate crystals. What is the diagnosis?

99. A. arthritis and arthrosis
B. gout
C. reactive arthritis
D. pseudogout

Pulmonary hypertension can be caused by too much blood being pumped into the lung vasculature. Which of the following causes of pulmonary hypertension is most likely in this case?

100. A. COPD
B. ventricular septal defect
C. pulmonary embolism
D. pneumectomy

A 45-year-old woman goes to the GP surgery to participate in the cervical cancer screening programme. Her daughter was vaccinated against human papilloma virus (HPV) last year. She asks the GP whether her daughter will also need to participate in the programme in due course. Under the current guidelines what is the policy on vaccinated women taking part in the programme?

101. A. her daughter will be invited to attend the cervical cancer screening programme
B. her daughter will not be invited to attend the cervical cancer screening programme

A 24-year-old woman attends the personality disorders outpatients' clinic to receive therapy once a week. The clerk is allowed to observe the therapy. During the session the clerk notices that he feels irritated by the patient. She reminds him of his ex-girlfriend, with whom he had a troubled relationship. What is this reaction called in medical terminology?

102. A. transference
B. countertransference

A GP diagnoses delirium in a 77-year-old dementia patient, presumably caused by a urinary tract infection. She lives together with her husband, who is fit. She suffers from fears, paranoid delusions and severe motor disturbance. The GP treats the urinary tract infection. What is the additional drug treatment of choice?

103. A. fluoxetine
B. haloperidol
C. morphine
D. thiamine

When it comes to questions of distribution – the funding of extremely expensive drugs, for example – decision-making in the health service takes place at either macro, meso or micro level. At which level do care institutions operate?

104. A. macro level
B. meso level
C. micro level

Respiration influences both heart rate and stroke volume. How do these change under physiological conditions during deep inspiration?

105. A. heart rate goes down, stroke volume increases
B. heart rate goes down, stroke volume decreases
C. heart rate goes up, stroke volume increases
D. heart rate goes up, stroke volume decreases

A 49-year-old woman attends the GP surgery. She has had a pain on the thumb side of her forearm for four weeks. Torsion and picking up an object are particularly painful. As part of the physical examination the GP asks the patient to make a fist with the fingers enclosing the thumb and the thumbnail extended as far as possible towards the base of the small finger. The GP then deviates the fist in the ulnar direction, maintaining it in slight extension, and the patient feels a familiar pain on the radial side of the wrist. Which diagnosis is consistent with this?

106. A. CMC1 (carpometacarpal joint) osteoarthritis
B. Dupuytren's contracture
C. scaphoid bone fracture
D. De Quervain's tendovaginitis

Exanthematous diseases of childhood are due to infections by microorganisms. Which of these diseases is caused by a bacterium?

107. A. morbilli (measles)
B. rubella (German measles)
C. scarlatina (scarlet fever)

A 24-year-old woman is seen in A&E after attempting suicide. She slit her wrists half an hour ago. There is a lot of blood on her clothing. The wounds bleed readily when touched. The patient is only just responsive. If the haematocrit is tested, what will the level be:

108. A. normal
B. elevated
C. reduced

In a 61-year-old man with claudication a pulse is palpable in the femoral artery on the side where the problem is. The dorsalis pedis artery and the posterior tibial artery on that side are not palpable, however. Which artery should be palpated to provide the best information on the level of arterial occlusion?

109. A. arcuate artery
B. fibular artery
C. peroneal artery
D. popliteal artery

An 89-year-old man has sustained a humeral shaft fracture as a result of a fall and cannot move his left hand properly. Examination shows that he is unable to actively extend his wrist and fingers. Which nerve is most likely to be affected?

110. A. axillary
B. median
C. radial
D. ulnar

A 73-year-old man is seen in A&E with lower left abdominal pain. He has occasional cramps. His bowel movements have been somewhat 'harder' for about three months. He used to have soft stools once or twice a day. For the past three months he has had stools every other day and has had to push. There is no blood in the stools. The only abnormality on physical examination is left lower abdominal tenderness. An abdominal X-ray does not show any free air, but the large intestine is somewhat swollen. Diverticulosis is at the top of the differential diagnosis list. What condition is also high up on the differential diagnosis list?

- 111. A. low ileus
- B. Crohn's disease
- C. polyps
- D. recurrent sigmoid volvulus
- E. sigmoid cancer

An 18-year-old boy brought into Accident & Emergency after a scooter accident is unable to give informed consent for his treatment. In this case informed consent means that decisions to intervene are taken:

- 112. A. by the physicians present
- B. by the family members present
- C. based on the patient's presumed consent

There is a division of labour between the various cells of the immune system. Which granulocytes provide the first line of defence against bacterial infection?

- 113. A. basophils
- B. eosinophils
- C. neutrophils

A fifteen-year-old boy goes to the GP for a follow-up consultation. He has acne vulgaris. Benzoyl peroxide and a topical retinoid (tretinoin) have proved ineffective. What is the next step in the treatment?

- 114. A. topical clindamycin
- B. oral doxycycline
- C. oral isotretinoin
- D. topical salicylic acid

A 61-year-old woman has been having joint problems in her hands and feet for the past two weeks. She has morning stiffness. Physical examination reveals painful, swollen MPJ joints that have limited freedom of movement. The MTP joints are only painful on tangential pressure and otherwise normal. The lab tests show elevated sedimentation and anti-CPP (cyclic citrullinated peptide) antibodies. What is the most likely diagnosis?

- 115. A. degenerative arthritis
- B. psoriatic arthritis
- C. infectious arthritis
- D. rheumatoid arthritis

A 32-year-old man goes back to the GP complaining of insomnia. His relationship was broken off four weeks ago, since when he has had difficulty falling asleep. He is worried about the reorganization that is taking place at his workplace. He notices that he is not functioning properly during the day because of the insomnia. Previous sleep recommendations have not helped and there is nothing wrong with his sleep hygiene. What is the short-term medication of choice?

116. A. melatonin
B. midazolam
C. promethazine
D. zolpidem

A polysaccharide used to maintain blood glucose level is stored in the liver. The same polysaccharide provides the muscles with energy for the production of ATP. Which polysaccharide is this?

117. A. amylose
B. cellulose
C. glycogen
D. glycosaminoglycan

Non-steroidal anti-inflammatory drugs (NSAIDs) are prostaglandin synthetase inhibitors. They suppress prostaglandin synthesis from a precursor. In which group of organic substances is the prostaglandin precursor classified?

118. A. proteins
B. carbohydrates
C. nucleic acids
D. fatty acids

An 87-year-old woman with a history of diazepam use is increasingly drowsy. The GP suspects the diazepam could be having a cumulative effect. Which pharmacokinetic change in the elderly contributes most to this cumulative effect?

119. A. different ratio between body fat and body water
B. increased elimination by the liver
C. reduced intestinal absorption
D. reduced elimination by the kidneys

Lower leg fracture is sometimes followed by compartment syndrome. The diagnosis is based on history and physical examination. Which of the following findings from physical examination minimizes the likelihood of compartment syndrome?

120. A. pressure of 40 mmHg in the anterior compartment
B. intact motor function and sensation in the toes
C. intact pulse in the dorsalis pedis and posterior tibial arteries

A carrier of a balanced Robertsonian translocation can produce gametes that, after fertilization by a healthy partner, give rise to an entirely normal child, a phenotypically normal balanced carrier, or a conceptus with full trisomy or full monosomy for one of the chromosomes involved. The chance of producing a normal child in this scenario is closest to:

- 121. A. 1/2
- B. 1/3
- C. 1/4
- D. 1/6

While carrying out neurological tests on a patient the neurologist notices that the tongue deviates to the right when extended. Which cerebral nerve is damaged and on which side?

- 122. A. glossopharyngeal, left
- B. glossopharyngeal, right
- C. hypoglossal, left
- D. hypoglossal, right

The thymus is gradually replaced with fatty tissue between the ages of 20 and 30. In what region of the body is the remnant of the thymus found in most cases?

- 123. A. inferior mediastinum
- B. superior mediastinum
- C. between the deep cervical and prevertebral fascia
- D. between the superficial cervical and deep cervical fascia

A 60-year-old man goes to Accident & Emergency with acute-onset redness and swelling of the face and swollen tongue and throat. He started taking amoxicillin for a throat infection this morning. The GP thinks it could be a hypersensitivity reaction. The type of hypersensitivity reaction needs to be known when deciding whether the patient should be admitted because of the risk of anaphylactic shock. Which type of hypersensitivity reaction is this?

- 124. A. Type I
- B. Type II
- C. Type III
- D. Type IV

A 12-year-old boy presents at the GP surgery with a painful, red, fluctuating swelling of the cuticle of his right middle finger. Inspection of the nails shows that he bites them. What is the most likely diagnosis?

- 125. A. onycholysis
- B. onychomycosis
- C. panaritium
- D. paronychia
- E. ingrown fingernail

A 65-year-old man has had increased abdominal girth and swollen ankles for a few weeks. What additional finding from the case history would suggest right-sided congestive heart failure?

126. A. dry unproductive cough
B. dyspnoea on exertion
C. nocturia
D. orthopnoea

Treating HIV with combination antiretroviral therapy (cART) produces a drop in mortality among HIV-infected patients, but there is as yet no cure. What is the direct effect of this treatment on the incidence and prevalence of the disease?

127. A. incidence remains the same; prevalence goes up
B. incidence goes down; prevalence goes up
C. both incidence and prevalence will go down
D. incidence goes up; prevalence remains the same
E. incidence remains the same; prevalence goes down

The testes produce spermatozooids. Precisely where are the spermatozooids found in the mature testis?

128. A. on the basal side of the seminiferous tubules
B. in the centre of the seminiferous tubules
C. between the seminiferous tubules

Various techniques are available to treat kidney and ureteral stones. Which technique has gained in 'popularity' because of technical advances during the past decade?

129. A. extracorporeal shockwave lithotripsy (ESWL)
B. open stone surgery
C. percutaneous litholapaxy (PNL)
D. ureterorenoscopy (URS)

A woman who is 20 weeks pregnant falls down the stairs. Three days later she gives birth to a baby that dies within an hour because its lungs are underdeveloped. What is the physician required to do as regards the death certificate?

130. A. the physician must issue a death certificate, as the baby died from natural causes
B. the physician must inform the municipal coroner, as the physician cannot be sure that the death was from natural causes because of the fall down the stairs
C. the physician is not required to do either of these things, as the Burial and Cremation Act (Wet op de Lijkbezorging) does not apply in this case

A man diagnosed as having been infected with extensively drug-resistant tuberculosis (XDR TB) refuses treatment. Under the Public Health Act (Wet Publieke Gezondheid) the mayor can impose certain coercive measures to protect public health. Which one can the mayor NOT impose?

- 131. A. involuntary treatment
- B. involuntary isolation
- C. involuntary examination
- D. ban on professional practice

Setting up a support group for young people of alcohol-abusing parents is an example of a preventive intervention in addiction care. Of which type of prevention is this an example?

- 132. A. indicated
- B. selective
- C. universal
- D. care-related

A 46-year-old man has had frequent urinary tract infections for the past six months. The urine is cloudy, foul-smelling and often seems to include air. The symptoms developed after an episode of general malaise and nagging pain in the lower left abdomen, which has cleared up meanwhile. The most likely explanation for the lower left abdominal pain is:

- 133. A. bladder cancer
- B. diverticulitis
- C. ureteral stone
- D. pyelonephritis

The risk of cardiovascular disease increases with blood cholesterol level, in particular the cholesterol bound to low-density lipoprotein (LDL). LDL transports cholesterol mainly:

- 134. A. from the intestines to the liver
- B. from the liver to other organs
- C. from the peripheral cells to the liver

A 65-year-old woman with psoriatic arthritis is taking methotrexate once a week in addition to diclofenac. She hardly gets out of the house, partly because of her joint problems and shame about the scaly skin, and has impaired mood, for which the GP has prescribed paroxetine. She is also on metoprolol and acetylsalicylic acid as secondary prevention following a myocardial infarction. What drug treatment is now indicated?

- 135. A. prophylactic omeprazole
- B. omeprazole as soon as she develops gastric problems
- C. prophylactic ranitidine
- D. ranitidine as soon as she develops gastric problems

The common bile duct passes through a particular peritoneal fold. What is that fold called?

136. A. falciform ligament
B. hepatoduodenal ligament
C. round ligament of the liver

In which of the following procedures can lidocaine 1% with adrenaline (epinephrine) safely be used as a local anaesthetic?

137. A. circumcision
B. naevus excision on the tip of the nose
C. naevus excision on the forearm
D. nail extraction
E. wedge excision of the hallux

A 42-year-old woman presents to the GP with a very painful, swollen upper eyelid that developed the previous day. Inspection reveals a red swelling accompanied by a pustule on the edge of the eyelid. What condition is this?

138. A. blepharitis
B. chalazion
C. entropion
D. hordeolum

A 27-year-old woman with a single pregnancy has severe nausea and is vomiting constantly at 9+2 weeks' amenorrhoea. The GP thinks it could be hyperemesis gravidarum. The urine is tested with a dipstick. What finding provides the best gauge of the severity of the hyperemesis?

139. A. glycosuria
B. ketonuria
C. proteinuria

A 49-year-old woman has symptoms consistent with vaginal prolapse. On gynaecological examination the gynaecologist notices a prolapse in the posterior vaginal wall. No intestinal structure is palpable in the rectovaginal septum on rectovaginal examination. What is the most likely diagnosis?

140. A. cystocele
B. enterocele
C. rectocele
D. urethrocele

A GP makes a house call to an 18-year-old woman complaining of increasing drowsiness. She returned a fortnight ago from visiting family in Nigeria. She did not take the prophylactic medication prescribed. On examination the GP notices twitching in the woman's arms and legs and she is not fully responsive. Her blood pressure is 122/77 mmHg and heart rate 120 bpm. Her body temperature is 38.5°C. There is tenderness in the right upper abdomen, where the liver is palpable 3 cm below the costal arch. An enlarged spleen is also palpable below the left costal arch. It emerges from the heteroanamnesis that she has been suffering from headache, shivering, nausea and vomiting and muscle pain in her legs for the past four days. What is the most likely diagnosis?

141. A. acute HIV infection
B. ascariasis
C. fulminant hepatitis
D. malaria

A 28-year-old woman has had a nagging pain in her left lower abdomen for a few weeks. For the past two weeks she has had diarrhoea with blood and mucus almost daily. She has a stressful job and moved house a few months ago and has therefore not paid much attention to the symptoms. She has lost 4 kilos over that period. Yesterday evening the abdominal pain became much worse and she developed fever. Her temperature is 38.9°C. On palpation of the left lower abdomen the entire colon is tender. No abnormalities are found in the anus on digital rectal examination, but there is blood on the glove. What is the most likely diagnosis?

142. A. ulcerative colitis
B. irritable bowel syndrome
C. diverticulitis

A 35-year-old woman goes to the GP with back pain and fever. The symptoms started last night. She noticed two days ago that urination was painful and that the urine came in dribs and drabs. She feels ill and has a temperature of 38.9°C. On physical examination there is tenderness in the right flank. What is the most likely diagnosis?

143. A. cholecystitis
B. cystitis
C. pyelonephritis
D. urolithiasis

A 27-year-old mother of two children would like to have another child. The GP is apprehensive of a future pregnancy as he believes that there is 'proven failed parenthood'. Both children were placed in foster care soon after they were born because of both sexual and domestic violence. The woman is certified as legally capable, but the GP thinks that the situation has not changed and that she and her partner cannot bring up a child responsibly. Can compulsory contraception be prescribed in this case, and if so for what reason?

144. A. yes, because there is a danger to the as yet unconceived child and 'proven failed parenthood'
B. yes, because the as yet unborn child is entitled to protection against its mother in case she harms it, intentionally or unintentionally
C. no, because there is no proof as yet that she will fail again as a parent
D. no, because the woman is legally capable and cannot therefore be compelled to use contraception

A concerned mother presents at the out-of-hours GP surgery with her two-year-old son, who has had flu symptoms for the past few days. He woke up late in the evening with inspiratory stridor and a barking cough. He has a slightly raised temperature. He has had all his vaccinations. What is the most likely diagnosis?

145. A. acute epiglottitis
B. acute subglottic laryngitis (pseudocroup)
C. diphtheria (croup)
D. pertussis (whooping cough)

A 62-year-old Caucasian woman is repeatedly found to have blood pressure of 160/95 mmHg. She is a smoker and her TC/HDL (total cholesterol/high-density lipoprotein cholesterol) ratio is elevated. Her first morning urine has been checked a few times and proteinuria was found every time. What type of antihypertensive drug is most appropriate to treat the hypertension?

146. A. ACE inhibitor
B. beta-blocker
C. calcium antagonist
D. thiazide diuretic

A healthy 21-year-old woman has painful mouth ulcers. Inspection reveals clear aphthous stomatitis. What preparation speeds up healing of this condition?

147. A. application of lidocaine solution
B. chlorhexidine mouthwash
C. no effective remedy known
D. vitamin C

A gynaecologist carries out blood tests on a woman whom she suspects of having polycystic ovary syndrome. Which abnormal hormone value is most consistent with polycystic ovary syndrome?

- 148. A. elevated LH level
- B. elevated progesterone level
- C. elevated FSH level
- D. low androgen level

A 49-year-old woman suffers from palpitation attacks which start abruptly and also end abruptly. During an attack she feels a rapid regular heartbeat. She has no other symptoms and her cardiac history is clean. What is the most likely diagnosis?

- 149. A. atrial fibrillation
- B. reentry tachycardia
- C. sick sinus syndrome
- D. ventricular extrasystoles (VEs)

An elderly patient has symptoms of polyneuropathy. Neuropathy (including polyneuropathy) can have widespread effects on muscles innervated by the affected nerve. What histological abnormality is characteristic of an innervation impairment?

- 150. A. group atrophy of muscle fibres
- B. muscle fibre necrosis
- C. vacuolization of muscle fibres

A 78-year-old man is becoming increasingly deaf, particularly in his right ear. On examination asymmetrical sensorineural hearing loss is found, particularly in his right ear. What cause of the hearing loss should be high up on the differential diagnosis list?

- 151. A. vestibular schwannoma
- B. chronic otitis media
- C. perforated eardrum
- D. excessive cerumen

A 75-year-old woman goes to the GP with her husband. She has been forgetful off and on for a few months, and she says she feels 'a bit stiff'. On further probing it emerges that she sometimes sees pixies climbing in through the window. Her husband says she is getting worse at activities of daily living. Given this information, which type of dementia is most likely?

- 152. A. frontotemporal dementia
- B. Lewy body dementia
- C. vascular dementia
- D. Alzheimer's disease

A nine-year-old boy presents at Accident & Emergency with severe lower right abdominal pain, fever, and vomiting that started the previous day. The pain gets much worse while walking or riding in a car. Blood tests show leukocytosis and moderately elevated CRP. A supplementary abdominal ultrasound is inconclusive. What abdominal examination is indicated?

153. A. CT scan
B. diagnostic laparoscopy
C. repeat ultrasound after 24 hours

A four-year-old boy is brought into A&E with severe dyspnoea after swallowing a marble. The Heimlich manoeuvre proves unsuccessful in removing the marble. The physician would like to create an alternative airway by means of cricothyrotomy. Where in the neck should the needle be inserted?

154. A. above the thyroid cartilage
B. in the cricothyroid membrane
C. below the cricoid cartilage

A two-year-old boy is being treated for asthma by a paediatrician. He is prescribed a beta-2 sympathomimetic. Which mode of administration is most suitable for this infant?

155. A. disk inhaler
B. metered dose aerosol with spacer and mask
C. metered dose aerosol with spacer and mouthpiece
D. powder inhaler

An A&E physician examines a 43-year-old man with palpitations. He hears a diastolic murmur with an opening snap followed by a rumble with the patient lying on his left side on the examination table. It is most audible at the apex. What is the most likely diagnosis?

156. A. aortic valve insufficiency
B. aortic valve stenosis
C. mitral valve insufficiency
D. mitral valve stenosis

A patient goes to a neurologist with double vision, especially when looking into the distance. He says he sees horizontal double images when looking to the right. The right image disappears when the left eye is covered. This is explained by the loss of function in which cranial nerve?

157. A. left abducent nerve
B. right abducent nerve
C. left oculomotor nerve
D. right oculomotor nerve

A 26-year-old G2P0 of Asian extraction goes to a midwife following a positive pregnancy test. On the first check-up at six weeks and four days' pregnancy Doppler evaluation repeatedly shows no heart action and the fundal height is much higher than expected. The gynaecologist who then sees the patient orders an ultrasound scan and blood tests. The hCG is 200,000 IU/L (1,080-56,000 IU/L) and T4 170 nmol/L (64-154 nmol/L). Which diagnosis is at the top of the gynaecologist's differential diagnosis list?

- 158. A. extrauterine pregnancy
- B. missed abortion
- C. molar pregnancy
- D. ovarian cyst

A 47-year-old woman goes to the GP with agitation and hot flushes that started a few weeks ago. The GP immediately notices pronounced bulging of the patient's eyes and thinks it could be Graves' disease. What other symptoms are consistent with Graves' disease?

- 159. A. bradycardia and diffuse goitre
- B. bradycardia and multinodular goitre
- C. tachycardia and diffuse goitre
- D. tachycardia and multinodular goitre

A healthy boy is born by elective Caesarean section. While being examined on the table he starts urinating spontaneously and it is noticeable that his urethra terminates half-way along the ventral side of the penis. What is the most likely diagnosis?

- 160. A. balanoposthitis
- B. hypospadias
- C. paraphimosis
- D. phimosis

An autopsy is carried out on a 63-year-old woman. She most probably died of chronic cardiac disease, having previously suffered from acute rheumatism. Given the prior history, which heart valve is likely to display the worst damage?

- 161. A. aortic valve
- B. mitral valve
- C. pulmonary valve
- D. tricuspid valve

A major complication of parotidectomy is damage to a particular nerve that has a close anatomical relationship with the parotid gland. Which nerve?

- 162. A. great auricular
- B. facial
- C. trigeminal

The kidneys respond to metabolic acidosis by inducing a particular enzyme.

Which one?

- 163. A. alanine aspartate transaminase (ALAT)
- B. glutamate dehydrogenase
- C. glutaminase
- D. Na/K-ATPase

Angiotensin-II plays an important role in regulating blood pressure. This hormone stimulates:

- 164. A. aminopeptidase conversion
- B. aldosterone production
- C. renin production
- D. acetylcholine release

A patient has an elevated uric acid level and has had three gout attacks in the past three years. He does not have any symptoms at present. The doctor would like to reduce the uric acid level. The patient also has a history of renal failure.

Which of the following drugs would be most suitable?

- 165. A. allopurinol
- B. colchicine
- C. ibuprofen

There are various types of hereditary polyposis coli, some of which have a greater risk of malignant degeneration than others. In patients with which type of polyposis coli is the risk of colon malignancy highest?

- 166. A. Peutz-Jeghers syndrome
- B. juvenile polyposis
- C. familial adenomatous polyposis

In a trial 25,000 patients with an ankle injury are treated with a new painkiller to compare it with paracetamol. The researchers had expected an improvement from the new painkiller with a difference of at least three points on the visual analogue scale between the two groups. The result of the study is a difference of 0.2 points with $p = 0.04$. The correct conclusion is that the difference found is:

- 167. A. clinically irrelevant
- B. not significant
- C. unreliable

Implantation in the uterus takes place five or six days after fertilization. At that point the embryo comprises:

- 168. A. 1 cell
- B. 4 to 16 cells
- C. more than 25 cells

In a healthy pregnant woman with a hitherto normal cycle the expected date of delivery is the 281st day from the first day of the last menstruation. The probability that the actual date will differ from the due date by more than a week is approximately:

169. A. 5%
B. 10%
C. 20%

A 78-year-old man presents at the GP surgery with patches of hard skin on his hands and balding head. On examination the GP finds multiple flat, hard thickenings of the skin that feel rough to the touch. The lesions are all less than 1 cm in size and slightly scaly. What is the most likely diagnosis?

170. A. cutaneous horns
B. leukoplakia
C. lichen sclerosus
D. actinic keratosis

A 48-year-old woman has a high spinal cord injury at C7. At her check-up she tells the rehabilitation specialist that she has shortness of breath off and on when sitting in her wheelchair. The rehabilitation specialist knows that her spinal injury makes her thoracic respiratory muscles less active, so it is important for her to sit in the correct position in the wheelchair. In which position in the wheelchair will the patient's breathing be best?

171. A. sitting upright supported in the anatomical position for lumbar lordosis and thoracic kyphosis
B. sitting upright on a reinforced seat to prevent leaning to one side
C. sitting with the backrest reclining at an angle of 45° to provide ample thoracic space

Spinal cord injury patients often have impaired micturition with a resulting higher risk of urinary tract infection. In one such patient Gram staining of the urine does indeed show bacteria. The patient is not feverish and does not feel anything while urinating because of the spinal injury. What is the best course of action?

172. A. test CRP, do not start the patient on antibiotics
B. do not test CRP, do not start the patient on antibiotics
C. test CRP, start the patient on antibiotics
D. do not test CRP, start the patient on antibiotics

A 65-year-old man has diabetes complicated among other things by peripheral arterial disease. He goes to the GP complaining of constipation. The GP thinks the cause could be diabetic autonomic neuropathy. Which terminal organ plays the major role in this constipation?

173. A. stomach
B. duodenum
C. colon
D. rectal ampulla

The authorities would like to launch a prevention campaign to reduce the incidence of kidney disease, focusing on combatting one risk factor. They therefore opt for the risk factor most strongly associated with the incidence of kidney disease. When selecting the risk factor with the strongest association they are best advised to base this on the:

174. A. attributed risk
B. odds ratio
C. population-attributed risk
D. relative risk

A seven-year-old boy presents at the GP surgery with blue patches over his entire body that developed a few days ago. He is not unwell otherwise. Physical examination does not reveal any abnormalities apart from the haematomas on the trunk and extremities. The blood picture shows Hb 7.8 mmol/L (normal), leukocytes $6.3 \times 10^9/L$ with normal differentiation and platelets $3 \times 10^9/L$ (normal $150 - 300 \times 10^9/L$). What is the most likely diagnosis?

175. A. haemophilia
B. idiopathic thrombocytopenia
C. child abuse
D. leukaemia

The further away from the heart, the smaller the difference between systolic and diastolic blood pressure. The combination of elastic and muscular arteries is a factor in this. What is the relationship between the amount of elastin in the vascular wall and distance from the heart? The amount of elastin in the wall of an artery:

176. A. goes DOWN, the further the artery is from the heart
B. goes UP, the further the artery is from the heart

The pathology report on an excised primary melanoma includes not only the diagnosis but also important prognostic information, such as the presence of ulceration. What other factor is important for prognostic purposes?

177. A. presence of melanin pigment
B. maximum tumour thickness in millimetres
C. polymorphism in the tumour cells

A paediatrician examines a girl who was born this morning. She was a breech birth. Physical examination is carried out among other things to detect congenital hip dysplasia. What is the test of choice?

178. A. check the gluteal fold for symmetry
B. flex the hips 90° in a supine position, then check whether the femoral head can be luxated by pressing the groin with the thumb and exerting axial pressure on the femur
C. check for unequal leg length by looking at the position of the feet while holding the pelvis straight and both knees flat on the table
D. check in supine position whether there is a difference in knee height when the hips and knees are held in 90° flexion

A 28-year-old woman is brought into A&E having been stabbed with a knife in her right chest cavity. She is becoming more dyspnoeic by the minute and is gasping for air. Her neck veins are congested. The physician thinks it could be tension pneumothorax. What findings from physical examination and supplementary tests would be consistent with this?

179. A. hypersonic percussion of the right hemithorax and trachea displaced to the left
B. hypersonic percussion of the right hemithorax and trachea displaced to the right
C. hyposonic percussion of the left hemithorax and trachea displaced to the left
D. hyposonic percussion of the left hemithorax and trachea displaced to the right

A 63-year-old patient with type 2 diabetes mellitus has pain in her hip, especially at night. She has no pain in the groin area. Based on this data, what is the most likely diagnosis?

180. A. trochanteric bursitis
B. coxarthrosis
C. inguinal hernia
D. sciatica

What is the best echocardiographic approach to show dilation of the aortic root?

181. A. transthoracic
B. transoesophageal
C. subcostal

Blood pressure can be described using Ohm's law and Poiseuille's formula, which predict that blood pressure depends on:

182. A. heart rate and the diameter of the resistance vessels
B. cardiac output and heart rate
C. cardiac output and the diameter of the resistance vessels

A 30-year-old woman is in A&E with severe headache, nausea and vomiting. She is also intolerant to light. Her husband thinks she is drowsy. The onset of the symptoms was sudden and they are rapidly increasing in severity. She has a temperature of 39.3°C. Neurological tests show that she has a stiff neck and her consciousness is indeed impaired. No focal loss is found. Her blood CRP is highly elevated (174 mg/L). A brain CT does not show any abnormalities. A lumbar puncture is performed. What CSF result is most consistent with the clinical picture described above? Leukocytosis with:

183. A. normal total protein, normal glucose
B. normal total protein, markedly reduced glucose
C. increased total protein, normal glucose
D. increased total protein, markedly reduced glucose

A 20-year-old man decides to train for a marathon. The training will produce changes in his muscles. What is one of the main changes?

184. A. increase in the diameter of type II muscle fibres
B. increase in the synthesis of glycolytic enzymes
C. increase in the number of capillaries surrounding the muscle fibres

A 20-year-old woman is in A&E with severe paracetamol intoxication and needs immediate treatment. She says she wants to end her life, however, and refuses any form of treatment. She is also determined not to be hospitalized. The physician judges that she is legally incapable of making this decision at present and wants to treat her. Does authorization need to be obtained for her to be treated, and if so what kind?

185. A. yes, emergency compulsory admission to a psychiatric hospital must be obtained
B. yes, a court order must be obtained
C. no, she can be treated without an authorization

One evening a Chemistry student is found by his girlfriend on the edge of the balcony of his student flat, four floors up. He tries to reassure her by telling her that he knows he can fly, the voices in his head say so. A Municipal Health Service official arrives on the scene and decides that the student is a danger to himself. What has to happen next?

186. A. he must be involuntarily committed and treated
B. he must be acutely sedated by the mental health crisis team
C. he must be involuntarily committed but must not be treated against his will

A patient with a monogenic disorder of fat metabolism presents with a plasma cholesterol level of 12 mM (3.9-7.3) and a plasma triglyceride level of 1 mM (0.8-2.3). What is the most likely underlying genetic abnormality? A mutation in:

187. A. the HDL receptor
B. the LDL receptor
C. apolipoprotein B
D. apolipoprotein E

Colonoscopy of a patient with abdominal pain and diarrhoea accompanied by rectal bleeding shows colitis. Several colon biopsies are taken. Histologically all the biopsies show chronic active inflammation with small crypt abscesses. The severity of the inflammation increases in the distal direction. What is the most likely diagnosis?

188. A. chronic active non-specific colitis
B. ulcerative colitis
C. pseudomembranous colitis
D. Crohn's disease

A four-year-old boy with severe malnutrition is treated with extra oral nutrition. Which of the following electrolyte disorders will the boy most likely develop after treatment is initiated?

189. A. hypophosphataemia
B. hyponatraemia
C. hypocalcaemia

Bleeding in the upper digestive tract can be due to a Mallory-Weiss tear. Where or in what case is a Mallory-Weiss tear most commonly found?

190. A. duodenal ulcer
B. oesophageal varices
C. violent vomiting
D. gastric carcinoma

Which of the following groups of patients is at the highest risk of acute osteomyelitis?

191. A. young children
B. alcoholics
C. diabetics
D. geriatric patients

What is the most common cause of primary adrenal cortex insufficiency in the Western world?

192. A. pituitary tumour
B. tuberculosis
C. auto-immune disease

What is the most common complication of peritoneal dialysis?

193. A. hypotension
B. bacterial peritonitis
C. portal hypertension

What is the most common cause of nephrotic syndrome in children?

194. A. minimal change nephropathy
B. membranous glomerulonephritis
C. a systemic disease such as SLE

Barrett's oesophagus can be due to acid reflux from the stomach. What is the pathogenetic process underlying this condition?

195. A. atrophy
B. dysplasia
C. hypertrophy
D. metaplasia

Elderly patients in hospital often display 'fidgeting' behaviour, fidgeting with their clothing and drips uncontrollably. Which mental function is impaired in these patients?

- 196. A. attention
- B. consciousness
- C. thinking
- D. mood
- E. perception

A weak pulse with a slow upstroke is found when palpating a patient's carotid artery. Which of the following heart defects is the most likely cause?

- 197. A. aortic insufficiency
- B. aortic stenosis
- C. mitral insufficiency

A seven-year-old boy has problems at school. His teacher says he is very easily distracted. His work is sloppy and he often does not complete it. The parents say he is a child who has always found it difficult to concentrate. He is also very impulsive, which sometimes causes problems when playing with other children.

What is the most likely diagnosis?

- 198. A. attention deficit hyperactivity disorder (ADHD)
- B. pervasive developmental disorder not otherwise specified (PDD-NOS)
- C. a specific learning disorder

An 80-year-old woman has been admitted to hospital. The geriatrician suspects that she has incipient dementia and carries out a cognitive screening test. She is unable to say the days of the week in reverse order, or to keep subtracting seven starting with one hundred. Which is the main cognitive domain that is impaired here?

- 199. A. attention
- B. thinking
- C. memory
- D. language

An eight-month-old girl is in A&E following a tonic-clonic seizure at home that lasted approximately two minutes. She had been unwell all day and during the past hour she has developed a fever of up to 39.3°C. When the physician examines her she is bright and alert again and there is no sign of meningeal irritation. What is the correct course of action?

- 200. A. investigate the cause of the fever
- B. investigate the likelihood of the seizure recurring
- C. administer diazepam rectally
- D. start her on prophylactic antiepileptics

END

RULES AND REGULATIONS FOR PROGRESS TESTS

- In the event of contravention of these Rules and Regulations the Test Coordinator may decide on behalf of the Board of Examiners to exclude the student from further participation in the test. A student who is denied access to the examination room will not be awarded a result for the test in question.
- Students shall obey the instructions of invigilators at all times.
- A place is reserved for each student. The test begins at 9 a.m.; students who fail to report at that time will not be admitted. Students may not leave the examination room until 30 minutes after the official commencement time of the test. Students who have left the examination room will not be permitted to re-enter it. Students are recommended to take possible delays into account when planning their journeys.
- Students are permitted to take a test if they can produce a valid student card, which should be placed on the desk so as to be clearly visible. Students who are unable to produce a valid student card may be admitted conditionally on the basis of another valid identity document; they must then produce a valid student card at the Medical Student Service Desk. (*Valid identity documents are solely the following: student card, passport, European identity card, driving licence, residence permit or student travel pass. An identity document without a photograph will not be accepted.*)
- In the event of fraud the Board of Examiners may rule the result of the test invalid. 'Fraud' means any action or omission on the part of a student that makes it wholly or partly impossible to form an accurate judgment of that student's or a fellow student's knowledge, understanding or skill.
- The answer form should be handed in to the invigilator at the official time or when indicated by the invigilator. Having handed in the answer form, students should leave the examination room as quickly and quietly as possible.

Results

The grades that can be awarded for a progress test are fail, pass and good. Answers are marked as right or wrong. A correct answer scores +1 point. The deduction for an incorrect answer is 1 divided by the number of possible incorrect answers, i.e.:

-1 for a two-choice answer

-1/2 for a three-choice answer

-1/3 for a four-choice answer

-1/4 for a five-choice answer

You can of course answer with a question mark, in which case you will score 0 points for that question.

The final score for the test is a percentage, which will be calculated as follows for a test comprising 200 questions:

$$\text{Score} = (\text{right-wrong})/200 \times 100$$

The answer key and the literature references will be posted on Nestor as soon as possible after 4 p.m. on the day of the test.

GENERAL INFORMATION

Progress tests

The purpose of the Faculty of Medicine's Inter-University Progress Test is to check the students' knowledge development during their studies. All students of Medicine therefore take a progress test four times a year. A progress test comprises a maximum of 200 questions geared to the requirements for the final physician's assessment. The questions are divided up among a number of curriculum-based categories and disciplines in line with a fixed distribution formula (the test blueprint). The blueprint is a guideline; the number of questions in each category and/or discipline in a particular test may vary from the blueprint. No rights may be derived from such departures from the guideline.

The questions

The questions are set by question-setting teams from the Faculties of Medicine at the universities of Maastricht, Nijmegen, Amsterdam, Groningen and Leiden. The questions are provided with literature references for study purposes..The references are mainly to books on the reading list of all participating partners. When it concerns vignette questions we can not always be given a literature reference , in this case, these provide feedback. The order of the questions in the test booklet is random. In the answer key you can read which discipline and category belongs to each question.

View the development of your medical knowledge on the internet

By using the programme ProF you can view the development of your medical knowledge, as measured by the IPTM, on the internet. You can find out how it works on the website <http://ivtg.nl/>. Students can log in with their student account (Snumber and password) to obtain access to several charts in which they can view their own knowledge development, compared to the development of their peer students. By viewing your knowledge development per category you can establish the strengths and weaknesses of your development for each cognitive domain. By doing so you can find out if you need to pay extra attention to certain subjects.

Note : The official results of the Progress Test are published in the usual way and never with the program ProF.

