

Database of questions for the Medical Final Examination (LEK) Part 2 Public health Modified 09.08.2024.

No 1. Individuals eligible for free healthcare services, regardless of health insurance, include, for example:

- A. children and youth up to 25 years old.
- B. people over 75 years old.
- C. those dependent on alcohol for detoxification treatment.
- D. distinguished Organ Transplant Donors.
- E. anti-communist opposition activists.

No 2. According to Lalonde's concept of fields, the factors that have the least impact on health and disease are the ones related to:

- A. environment, such as chemical and physical factors.
- B. heredity.
- C. the organization and functioning of the healthcare system.
- D. lifestyle.
- E. wealth.

No 3. The health care model based on universal health insurance is a model:

- A. residual model dominant in Belgium and France.
- B. Beveridge model dominant in Poland and Germany.
- C. bureaucratic model dominant in Great Britain and Norway.
- D. Bismarck model dominant in Canada and the USA.
- E. Bismarck model dominant in Poland and Austria.

No 4. The Fagerstrom test is applied for the:

- A. assessment of the degree of nicotine addiction.
- B. assessment of the degree of alcohol dependence.
- C. assessment of the exposure to tuberculosis.
- D. detection of type II diabetes.
- E. detection of hyperlipidemia.

No 5. A 50-year-old female patient, who has not participated in any preventive program for 10 years, gives no history of behavioral risk factors or disturbing symptoms. According to the National Cancer Program, it should be recommended to her that she participates in a population-based screening test for the detection of:

- A. lung and stomach cancer.
- B. cervical, breast and colorectal cancer.
- C. laryngeal and bladder cancer.
- D. lung, breast and head and neck cancer.
- E. the type of cancer that has occurred in the family.

No 6. Public health functions for the general public include:

- A. individual prevention, organization of preventive services - e.g. protective vaccinations.
- B. primary healthcare, medical assistance for the homeless and other people deprived of access to health care services.
- C. prevention and treatment of diseases of social importance: AIDS, infectious diseases including tuberculosis, mental illnesses, addictions, selected civilization diseases (e.g. diabetes).
- D. organization of active counseling for high-risk groups.
- E. monitoring of the health condition of the population.

No 7. 90% sensitivity and 80% specificity of a diagnostic test in screening tests means that:

- A.** 10% of healthy people will get a negative test result and 20% of sick people will get a positive test result
- B.** 10% of sick people will get a negative test result and 20% of healthy people will get a positive test result.
- C.** 90% of sick people will get a negative test result and 80% of healthy people will get a positive test result.
- D.** 90% of healthy people will get a negative test result and 80% of sick people will get a positive test result.
- E.** 10% of people will have in-depth diagnostics due to the positive test result and 20% will be directed to reskining.

No 8. Negative measures of the condition of health of the population may include:

- A.** average life expectancy.
- B.** morbidity.
- C.** quality of life.
- D.** indirect – regarding the condition of the natural environment.
- E.** life satisfaction.

No 9. In epidemiological analytical studies, a researcher can use the retrospective method. It can be said that it:

- A.** is a cost and time-consuming method.
- B.** begins with healthy people divided into groups according to different exposures.
- C.** is not useful for testing diseases of low incidence.
- D.** it begins with a group of diseased cases and looking for causal factors.
- E.** gives the possibility of interference in the research process and the most reliable results.

No 10. According to the Act of 5 December 2008 on the Prevention and Combating of Infections and Infectious Diseases in Humans, compulsory treatment applies to individuals:

- 1) suffering from gonorrhoea;
- 2) suffering from pulmonary tuberculosis;
- 3) suspected of contracting cholera;
- 4) suspected of contracting pertussis;
- 5) suffering from dysentery.

The correct answer is:

- A.** 1,2 **B.** 3,4. **C.** 3,5. **D.** 2,3. **E.** 4,5.

No 11. The DALY metric - as an important criterion in health policy used to determine the condition of health of the society is:

- A.** life expectancy in health which indicates the number of years lived in full health.
- B.** indicator of the quality of life associated with health and disease – it allows to understand how the disease affects the patient's functioning and how the applied therapy affects them.
- C.** lost life expectancy due to premature death or health impairment as a result of injury or illness.
- D.** indicator of healthy life years in which we have full efficiency and are maximally productive.
- E.** quality-adjusted life years – combines mortality and quality of life into a single value.

No 12. Preventive medical examinations for employees are provided and financed by:

- A.** National Health Fund.
- B.** employer.
- C.** Provincial Labour Inspectorate.
- D.** Provincial Sanitary Inspectorate.
- E.** local government unit.

No 13. Phase II prevention activities include:

- A. preventive vaccinations.
- B. rehabilitation activities aimed at preventing post-disease complications.
- C. use of personal protection of, e.g. hearing at the workplace, where there is exposure to noise.
- D. active counseling in occupational medicine.
- E. promoting a healthy lifestyle.

No 14. "The process enabling people to control their own health and improve it " – is the definition contained in the Ottawa Charter regarding:

- A. disease prevention.
- B. health policy.
- C. health education.
- D. reparative medicine.
- E. health promotion.

No 15. Infant mortality rate:

- 1) is the number of deaths in the first week of a newborn's life divided by the number of live births and stillbirths;
- 2) is the number of infant deaths per year divided by the number of all members of the population;
- 3) is the number of infant deaths divided by the number of live births in a given year;
- 4) has decreased almost 5 times in Poland when comparing the current rate to its level in the 1990s;
- 5) is recognized worldwide as one of the most important indicators of civilizational progress.
- 6) has been in Poland at a similar level (its value has been unchanged) for two decades.

The correct answer is:

- A. 3,4,5. B. 1,5,6. C. 2,4. D. 3,6. E. 2,5,6.

No 16. The process in which people learn how to take care of their own health and the health of the community in which they live is called:

- A. social support.
- B. health competences.
- C. health education.
- D. public health.
- E. health promotion

No 17. In the health determinants model by Dahlgren and Whitehead (the rainbow model; environmental and social model) the greatest impact on health is exerted by:

- A. knowledge, attitude and behavior related to the individual lifestyle.
- B. bonds and support networks in communities.
- C. general cultural, socio-economic and political conditions.
- D. living and work-related conditions.
- E. age, gender and other biological factors.

No 18 Which of the following basic tasks (functions) of public health effective in the WHO European region (Essential Public Health Operations, EPHOs) belong to the group of leading tasks (functions):

- 1) supervision of the health and well-being of the populatiuon;
- 2) disease prevention;
- 3) provision of organizational structure and financing;
- 4) health promotion;
- 5) development of public health research for policy and practice needs.

The correct answer is:

- A. 1,2,3. B. 2,3,4. C. 3,4,5. D. 1,3,5. E. 1,2,4.

No 19. The main causes of deaths in Poland are:

- A. malignant tumors.
- B. cardiovascular diseases.
- C. traffic accidents.
- D. metabolic diseases.
- E. gastrointestinal diseases.

No 20. In the prevention of chronic non-infectious diseases, according to WHO recommendations for the general population, the optimal intake of trans fatty acids is:

- A. 1-3% of total energy consumption.
- B. less than 1% of total energy consumption.
- C. 15-30% of total energy consumption.
- D. 10-15% of total energy consumption.
- E. there is no limit set for the consumption of trans fatty acids.

No 21. Obesity in adults is diagnosed when the body mass index (BMI) is:

- A. between 18.5 and 24.9 kg/m².
- B. between 18.5 and 24.9 m/kg².
- C. from 30,0 kg²/m.
- D. from 30,0 kg/m².
- E. from 30 m²/kg.

No 22. The guidelines of the World Health Organization (WHO, 2020) on physical activity and sedentary lifestyle comprise recommendations on the amount and types of physical activity with scientifically proven benefits and are as follows:

- 1) guidelines are addressed to children over 5 years of age, adults, elderly people and for the first time they contain specific recommendations for pregnant and postpartum women and people living with chronic diseases or disabilities.
- 2) according to new recommendations, adults (18-64 years) should perform physical activity for 150-300 minutes per week with moderate intensity or 75-150 minutes with high intensity.
- 3) it is recommended that all pregnant and postpartum women without medical contraindications to perform physical activity take up regular physical activity throughout pregnancy and after delivery. They should do at least 150 minutes of moderate intensity aerobic physical activity throughout the week, as well as aerobic and muscle strengthening exercises.
- 4) it is recommended that all age groups limit the sedentary lifestyle to 4 hours daily.
- 5) any physical activity is better than none.

The correct answer is:

- A. 1,2. B. 2,3. C. 1,2,3. D. 1,2,3,4. E. 1,3,5.

No 23 In the prevention of chronic non-infectious diseases, according to the WHO recommendations for the general population, optimal:

- A. consumption of free sugars should be reduced to less than 10% of total energy intake. A reduction to less than 5% of the total energy consumption would provide additional health benefits.
- B. would be a reduction in salt intake to the recommended level below 2 g per day, which would help prevent 1.7 million deaths each year.
- C. would be a reduction in the total fat intake to less than 15% of total energy consumption to prevent unhealthy weight gain among adult population.
- D. fruit and vegetable consumption is 400 g (i.e. five portions) per day, including potatoes, sweet potatoes, cassava and other starch roots.
- E. consumption of macronutrients in the diet should be determined by national institutions and scientific societies for the populations of individual countries.

No 24. The current healthcare system in Poland can be characterized as a/an:

- A. central planning system.
- B. insurance-based system.
- C. insurance and budget-based system.
- D. free-market system.
- E. public system.

No 25. Public health activities:

- A. are always associated with government activities at various levels, and responsibility is accounted for in the political process.
- B. refer to activities and go beyond individual activities and focus on health determinants that are not subject to interventions made by an individual.
- C. relate to health problems particularly widespread or considered as particularly important in a given society.
- D. relate to health benefits focused on social environment problems.
- E. all of the above.

No 26. The basic criteria for the effectiveness of the healthcare system include:

- A. availability.
- B. comprehensiveness.
- C. continuity.
- D. efficiency and quality.
- E. all of the above.

No 27. The premise of the coordinated healthcare concept is to systematically continue:

- A. preventive activities.
- B. only diagnostic activities.
- C. therapeutic activities.
- D. rehabilitation activities.
- E. all of the above.

No 28. If a diagnostic test is performed, the percentage of individuals actually healthy among all individuals for whom the diagnostic test yielded a negative result (among all individuals diagnosed as healthy by the diagnostic test) is the test's:

- A. specificity.
- B. sensitivity.
- C. positive predictive value.
- D. negative predictive value.
- E. true prevalence of the disease.

No 29 Which of the collected information is used in the preparation of an epidemiological description of an observation made?

- 1) definition of the case of the disease.
- 2) information regarding the individual.
- 3) information regarding the location.
- 4) information regarding the time.
- 5) information regarding the cause or risk factor of the disease; mode of transmission.

The correct answer is:

- A. 2,3,4.
- B. 1,2,5.
- C. 1,3,4.
- D. 1,2.
- E. all of the above

No 30. Hospital infections are one of the main public health problems and effective prevention is necessary. Which of the following types of isolation is applied on admission to hospital for a transplant of a 36-year-old patient, who is a heart transplant recipient?

- A. standard.
- B. protective.
- C. contact.
- D. droplet.
- E. dust.

No 31. Please indicate the organizational models of healthcare systems arranged chronologically (according to their time of creation):

- A. Bismarck model; Beveridge model; Siemaszko model; free market model.
- B. Bismarck model; Siemaszko model; Beveridge model; free market model.
- C. Beveridge model; Bismarck model; Siemaszko model; free market model.
- D. free market model; Bismarck model; Siemaszko model; Beveridge model.
- E. free market model; Beveridge model; Bismarck model; Siemaszko model.

No 32. 1,000 elderly people with suspected dementia underwent screening and diagnostic (verification) tests. The prevalence of dementia in this population is 25%. 240 people tested positive in both screening and verification studies, and 600 people tested negative in both studies. The remaining 160 people obtained false test results. What percentage of healthy people have been falsely identified as having dementia?

- A. 2%.
- B. 4%.
- C. 20%.
- D. 38%.
- E. 62%.

No 33. Which article of the Constitution of the Republic of Poland deals with the fact that "Everyone has the right to safe and hygienic working conditions"? The manner of exercising this right and the obligations of the employer are specified in Article:

- A. 66.
- B. 67.
- C. 68.
- D. 74.
- E. 76.

No 34. The biomarkers of exposure to tobacco smoke include:

- 1) concentration of cotinine in urine, blood, saliva.
- 2) levels of high-molecular-weight DNA adducts in peripheral blood leukocytes.
- 3) concentration of phthalates in urine.
- 4) concentration of carboxyhemoglobin in blood.
- 5) concentration of fluorides in urine.

The correct answer is:

- A. all of the above.
- B. 1,2,3,4.
- C. 1,2,4.
- D. 3,4 .
- E. only 1.

No 35 According to the definition of the potential years of life lost, (PYLL) indicator, a person who died at the age of 35 can be assigned a PYLL value equal to:

- A. 20 years.
- B. 30 years.
- C. 35 years.
- D. 40 years.
- E. 45 years.

No 36. Indicate the true statements concerning the perinatal mortality rate:

- 1) it is the number of stillbirths together with deaths in the first week of life in relation to the number of live and stillbirths.
- 2) it refers to the number of children who died during the first 2 weeks of life in relation to the number of live births during this period.
- 3) it is used to assess mother and child healthcare.
- 4) perinatal mortality rate in 1985 in Poland was 21.8 (per 1000).
- 5) perinatal mortality rate in 2006 in Poland was 6.0 (per 1000).

The correct answer is:

- A.1,3,4,5.
- B. 2,3,4,5.
- C. 1,3,4.
- D. 2,4.
- E. 1,3.

No 37. Indicate the true statements concerning the disability-adjusted life years metric (DALYs):

- 1) this metric is an attempt to comprehensively address the problem of diseases and their impact on people's lives by combining in a single indicator life expectancy and a decrease in the quality of life associated with disability and invalidism.
- 2) the methodology for calculating the DALY is complicated, requires a lot of good quality, complete data on the health situation.
- 3) while measuring the burden of illness on society, DALY is a combination of 2 measurements: loss of potential years of life due to premature deaths and health losses due to disability.
- 4) to calculate the loss of DALY due to premature mortality, the so-called standard life expectancy is used.
- 5) the loss of DALY caused by disability is calculated by multiplying the length of life of the ill/ the lives of the diseased people by the coefficient corresponding to the severity of their disability.

The correct answer is:

- A. 1,3. B. 2,3,4. C. 2,4,5. D. 1,3,4,5. E. all of the above.

No 38. The authors of the meta-analysis published in 2020 in the Clinical and Translational Gastroenterology journal (article e00127), regarding the relationship between Helicobacter pylori infection and colorectal cancer, give the value of the odds ratio OR = 1.44 (95% CI: 1.26 - 1.65). Which of Hill's criteria for causation is met thanks to the evidence provided?

- A. temporality.
- B. consistency.
- C. strength.
- D. specificity.
- E. plausibility.

No 39. The authors of the paper published in the Arquivos de Gastroenterologia journal (2021, vol. 58, pp. 114-9) assessed the evidence for a causal relationship between Helicobacter pylori infection and colorectal cancer. It has been observed that Helicobacter pylori infection in most patients is acquired in their childhood, before the age of 10. Which of Hill's criteria for causation is met by the evidence provided?

- A. temporality.
- B. consistency.
- C. strength.
- D. biological gradient.
- E. plausibility.

No 40 In 2017, the results of a large prospective cohort study were published in the New England Journal of Medicine (NEXT 2017, 377, 2228-39), whose purpose was to analyze the relationship between the use of hormonal contraception and the risk of breast cancer in women. Compared to women who have never used hormonal contraception, the relative risk of breast cancer in women who are currently or have recently used hormonal contraception is 1.20 (95% confidence interval: 1.14 – 1.26). The result obtained indicates that hormonal contraception:

- A. statistically insignificantly increases the risk of breast cancer by 20%.
- B. statistically significantly increases the risk of breast cancer by 20%.
- C. statistically significantly decreases the risk of breast cancer by 20%.
- D. statistically significantly increases the risk of breast cancer by 120%.
- E. does not significantly affect the risk of breast cancer.

No 41. Which of the following vaccines used in Poland is polyvalent?

- A. against tetanus.
- B. against viral hepatitis B.
- C. against human papilloma virus (HPV).
- D. against measles, mumps and rubella (MMR).
- E. against viral hepatitis A.

No 42. In the International Journal of Infectious Diseases (Int J Infect Dis. 2021; 102: 63 – 69) a study was published, which included healthcare professionals working in level I trauma center in southern Bronx, in the period from 1st March to 1st May, 2020. Having obtained informed consent, participants underwent qualitative serological tests (Abbott Architect SARS-CoV-2 IgG Assay, Abbott Park, IL 60064 USA) and completed an online survey that contained information about age, race/ethnicity, comorbidities, home zip code and details of health care and social exposure factors for COVID-19, time of infection and duration of COVID-19 infection symptoms such as: fever, cough, dyspnoea, lack of smell, lack of taste, muscle pain, nausea and/or diarrhoea over the last 8-10 weeks. What type of epidemiological study was used?

- A. descriptive.
- B. ecological.
- C. cross-sectional.
- D. case-control.
- E. cohort.

No 43. Indicate the screening test parameter, which depends most on the incidence of the disease in the population:

- A. sensitivity.
- B. specificity
- C. positive predictive value rate.
- D. negative predictive value rate.
- E. positive predictive value.

No 44. You work as a doctor at the medical treatment department. Which of the pathogens isolated in your patient are subject to monitoring in a hospital environment and you should report to the Team for Infection Control?

- 1) gram-negative *Enterobacteriaceae spp.* rod producing extended-spectrum beta-lactamases.
- 2) *Streptococcus pneumoniae* resistant to 3rd generation cephalosporins.
- 3) enterococci *Enterococcus spp.*
- 4) *Pseudomonas aeruginosa*.
- 5) noroviruses.
- 6) *Legionella pneumophila*.

The correct answer is:

- A. only 2. B. 2,4,5. C. 2,3,6. D. 1,2,5,6. E. 1,3,4,5.

No 45 In a community of 70,000 residents, 35 people suffered a stroke during the year. The incidence rate per stroke in this population was:

- A. 0.005%.
- B. 35/70 thousand people.
- C. 50/100 thousand people.
- D. 35/100 thousand person-years.
- E. 50/100 thousand person-years.

No 46. The phenomenon of the diverse risk of developing depression among various social groups can be accounted for by:

- A. different availability of healthcare.
- B. genetic factors.
- C. varying levels of tryptophan content in the diet.
- D. varying levels of physical activity.
- E. different levels of resilience (adaptability) resulting from the socio-economic situation, values held or education.

No 47. Health care factors **do not include**:

- A. loneliness.
- B. social support from family and friends.
- C. adaptability.
- D. literacy.
- E. physical activity.

No 48. The biomedical model of the disease describes the mechanism of health and disease mainly based on the idea of:

- A. social structure.
- B. ecology.
- C. reductionism.
- D. pragmatism.
- E. psychology.

No 49. In 2021, an increase in the incidence of myocarditis was observed among adolescents. In order to verify the link between this state and the recent mass vaccination against COVID-19, the percentage of vaccinated individuals in the group of patients was compared with the percentage of vaccinated individuals in healthy adolescents. What kind of study is it?

- A. cross-sectional.
- B. case-control.
- C. prospective cohort.
- D. retrospective cohort.
- E. experimental.

No 50. Population health indicators **do not include**:

- A. level of physical activity.
- B. conscious and responsible sexual behavior.
- C. overweight and obesity.
- D. level of participation in religious practices.
- E. immunity level due to participation in vaccinations.

No 51. Inequalities in health may result from the following mechanisms and phenomena, except for:

- A. socio-economic status.
- B. level of education.
- C. access to medical services.
- D. variable economic situation.
- E. difficult access to disability benefits and pensions.

No 52 Data from physical examinations of newborns of the maternity ward from 1960 were analyzed in 2021 to check whether the birth weight was associated with the development of coronary artery disease until 2020. This is an example:

- A. cross-sectional study.
- B. case-control study.
- C. prospective cohort study.
- D. retrospective cohort study.
- E. experimental study.

No 53. In 2010, researchers began a study on the relationship between the level of cholesterol and stroke. A group of 5,000 healthy people who participated in the cholesterol screening program in 1995 were qualified for the study. The researchers determined exposure categories based on cholesterol levels at the time of screening. The cut-off value of 200 mg/dl was used to define "high" cholesterol, while people with levels below 200 mg/dl were defined as having "low" cholesterol. According to this definition, 2,000 people had "high" cholesterol and the remaining 3,000 people had "low" cholesterol. The researchers found that 300 cases of stroke occurred before the end of 2012, of which 120 occurred in the high cholesterol group. What type of coefficient should the researchers calculate to estimate the strength of the relationship between "high" cholesterol and stroke risk?

- A. odds ratio.
- B. prevalence rate.
- C. incidence rate.
- D. positive predictive value.
- E. relative risk.

No 54. Studies on the role of vitamin D in the development of depression have shown that there is no relationship between these two variables. Previous cross-sectional studies showed that vitamin D deficiency was associated with depression when both of these phenomena were studied simultaneously. Which of Hill's criteria for causation were verified in subsequent prospective studies?

- A. reversibility.
- B. time dependence.
- C. biological credibility.
- D. analogy.
- E. dose-response relationship.

No 55. Research on the greater prevalence of mental health disorders in areas with limited access to green areas is an example of:

- A. ecological study.
- B. cross-sectional study.
- C. case-control study.
- D. prospective cohort study.
- E. retrospective cohort study.

No 57. Mass screening for the presence of the disease in asymptomatic individuals is only justified if:

- A. the disease is a socially important problem.
- B. the diagnostic test is socially accepted.
- C. there is evidence from experimental clinical trials, that the use of this strategy gives more health benefits to people participating in the studies in comparison with those not undertaking such studies.
- D. the disease has a sufficiently long latency period.
- E. there is effective treatment for the disease when it is in the symptomatic phase.

No 58. Rank the following sources of information on the effectiveness of drugs used in clinical practice from the most to the least scientifically credible:

- 1) Summary of Product Characteristics (medicines registered in Poland).
- 2) positions of Scientific Societies (e.g. the Polish Society of Cardiology).
- 3) meta-analysis of clinical trials (scientific publications in peer-reviewed magazines or of Cochrane Library type).
- 4) opinions of expert practitioners (e.g. such as those presented on the uptodate.com portal).

The correct answer is:

- A.** 1,2,3,4. **B.** 3,2,4,1. **C.** 1,4,2,3. **D.** 2,3,4,1. **E.** 4,3,2,1.

No 59. The positive predictive value for the diagnosis of colorectal cancer in the presence of blood in the stool is 5%. This means that:

- A. cancer is present in every 20 patients with this symptom.
- B. it is not justified to continue the diagnosis in the event of such a symptom.
- C. the predictive value will be lower if additional clinical symptoms suggestive of proliferative change are present.
- D. the test's sensitivity would be lower for more advanced stages of cancer.
- E. colonoscopy is not a better way to detect colorectal cancer.

No 60. Which of the following **is not** a medical experiment?

- A. the use of a drug in an indication other than its registered one.
- B. an action related to the necessity of implementing medical procedures without the consent of the person undergoing such a medical procedure, if it is justified by the public well-being.
- C. a retrospective analysis of data collected within services financed by the National Health Fund.
- D. phase I clinical trial in healthy volunteers to assess drug metabolism.
- E. the use of a medical procedure of undocumented effectiveness on a person who consents to it.

No 61. Health promotion, supported by appropriate state policy, includes activities focused on:

- 1) health determinants.
- 2) risk factors for civilization diseases, solely.
- 3) early detection of health disorders.
- 4) improvement of the quality of life in the disease.
- 5) improvement of the quality of the natural environment.

The correct answer is:

- A.** 1,2. **B.** 1,3. **C.** only 4. **D.** 1,5. **E.** only 1.

No 62. The right to health protection and equal access to healthcare services financed from public funds is guaranteed in Poland by the provisions of the:

- A.** National Health Program.
B. Public Health Act.
C. Statute of the National Health Fund.
D. Act on the Social Security System.
E. Constitution of the Republic of Poland.

No 63. The state's health policy includes the following objectives and tasks:

- 1) development of medical care.
- 2) providing conditions conducive to health in the living environment.
- 3) providing conditions conducive to health in the workplace environment.
- 4) providing healthy food.
- 5) disease prevention measures.

The correct answer is

- A.** 1,2,4. **B.** 1,3,4. **C.** 1,2,5. **D.** 1,2,3,4. **E.** all of the above.

No 64. In Poland, the tasks assigned to the State Sanitary Inspection under the authority of the Minister competent for health are performed by:

- 1) Chief Sanitary Inspector.
- 2) State Provincial Sanitary Inspector.
- 3) State County Sanitary Inspector.
- 4) State Municipal Sanitary Inspector.
- 5) State Border Sanitary Inspector.

The correct answer is:

- A.** 2,4,5. **B.** 1,2,3,5. **C.** 1,2,3,4. **D.** 2,3,4. **E.** 1,3,4,5.

No 65. The potential years of lost life indicator (PYLL) is useful in assessing the overall effectiveness of healthcare in relation to a given population and means:

- A.** the difference between the number of years of life expected for a given population and the average age of death in that population.
B. the difference between the number of years of life expected for a given population and the average age of death due to chronic non-communicable diseases in that population.
C. the difference between the number of years of life expected for a given population and the actual number of years of healthy life.
D. the number of years of life lost at the time of premature death.
E. the number of years of life lost due to death after reaching the age of 75.

No 66. An epidemiological cross-sectional type study was conducted to determine the potential relationship between sleep quality and headache. The results showed that in the group of 200 participants with sleep disorders, the incidence of morning headaches was 20%, and in the group of 150 participants without sleep disorders the incidence of such headaches was 5%. Which of the following methods of data analysis is necessary to verify the formulated study objective?

- A.** Student's t-test.
B. linear correlation analysis.
C. chi-square test.
D. analysis of variance (ANOVA).
E. linear regression analysis.

No 67. Activities in the epidemiological investigation aim to determine:

- 1) aetiological factor.
- 2) causes, sources and reservoirs.
- 3) mechanisms of infection spread.
- 4) cases of illness.
- 5) deaths

The correct answer is:

A. 1,2,3,4. **B.** 1,2,4,5. **C.** 1,4,5. **D.** 2,3,4,5. **E.** 1,2,3.

No 68. The overall mortality in 2020 in city A is expressed by a mortality rate of 110/10000, and in city B, in the same year the mortality rate was 100/10000. A credible interpretation of the observed difference in overall mortality is not possible without taking into account:

- A.** the number of inhabitants in both cities in 2020.
- B.** mortality in both cities in the year preceding the recorded coefficients.
- C.** death structures for the four most common causes in both cities in 2020.
- D.** age structure of the inhabitants of both cities in 2020.
- E.** mortality due to the four most common causes in both cities in 2020.

No 69. A specific prostate antigen (PSA) was tested in 1000 patients diagnosed with prostate cancer. A positive PSA test was obtained in 800 patients. The result obtained reflects the diagnostic accuracy of the PSA test expressed by:

- A.** 80% diagnostic specificity of the test.
- B.** percentage of false positive results at the level of 20%.
- C.** 20% diagnostic specificity of the test.
- D.** 80% diagnostic sensitivity of the test.
- E.** percentage of true negative results at the level of 20%.

No 70. The results of a study have shown that the incidence rate for chronic bronchitis is 2 times higher in the bakery workers group than in teachers. All the participants were men of a similar age.

The conclusion presented comes from the following type of epidemiological study:

- A.** cross-sectional.
- B.** case-control.
- C.** ecological.
- D.** cohort.
- E.** experimental.

No 71. A study was conducted on a representative group of 300 overweight people, detecting the presence of 100 people with high recreational physical activity and 200 people with low recreational physical activity in this group. In the data analysis an assessment of the statistical significance of the difference between the values of the body mass index (BMI) measured in both groups was planned.

Obtaining a conclusive result in this case requires the:

- A.** use of the chi-square test after the diagnosis of normal distribution.
- B.** use of the Student's t-test having carried out the Shapiro-Wilk test.
- C.** calculation of the odds ratio, with a 95% confidence interval.
- D.** use of the Student's t-test having carried out the Mann-Whitney test.
- E.** use of Pearson's or Spearman correlation analysis.

No 72. The population screening for disease X is justified when:

- 1) disease X is a significant social problem (including prevalence, mortality).
- 2) validated diagnostic screening test for disease X is available.
- 3) is the recognizable subclinical period in the natural history of disease X.
- 4) documented knowledge about the risk factors for disease X is available
- 5) recognized (recommended) therapeutic method of disease X is available.

The correct answer is:

A. 1,2,3,4. **B.** 1,2,3,5. **C.** 1,2,4,5. **D.** 1,3,4,5. **E.** 2,3,4,5 .

No 73. As defined in the Act of 5th December, 2008 on Combating Infections and Infectious diseases in humans, hospital infection is:

- A.** this, which occurred in connection with the provision of health services in the situation when the disease did not remain at the time of provision of health services in the incubation period or occurred after the provision of health services, in the period of time not longer than the longest period of its incubation.
- B.** this, which occurred in connection with the provision of health services in the situation when the disease did not remain at the time of provision of health services in the incubation period or occurred after the provision of health services, within a period not exceeding seven days from the date of the last health service.
- C.** this, which occurred in connection with the provision of health services in the situation when the disease did not remain at the time of provision of health services in the incubation period and occurred after the provision of health services, within a period of time reflecting the average incubation period in a given population.
- D.** an infection with a drug-resistant micro-organism that has occurred in connection with the provision of health services, in the situation, when the disease did not remain at the time of provision of health services during the incubation period or occurred after the provision of health services within a period of time not exceeding its average incubation period.
- E.** an infection that has occurred in connection with the provision of health services by personnel with documented disease carriers, in the situation, when the disease did not remain at the time of provision of health services during the incubation period or occurred after the provision of health services in a period of time not longer than the longest period of its incubation.

No 74. In the classification of basic healthcare systems, the organizational model in which the leading statutory solution is to finance free and common access to healthcare services, based on compulsory health insurance is known as the:

- A.** Bismarck model.
- B.** Beveridge model.
- C.** Siemaszko model.
- D.** free market model.
- E.** hybrid model.

No 75. The measurement of lead concentration in the blood used in environmental epidemiology studies is a biomarker of:

- A.** the body's biological response to the toxic influence of lead.
- B.** long-term exposure of the body to lead.
- C.** susceptibility of the body to the toxic effects of lead.
- D.** early nervous system disorders.
- E.** early systemic symptoms of lead poisoning.

