



**STATE NON-PROFIT ENTERPRISE
«TESTING BOARD FOR PROFESSIONAL COMPETENCE ASSESSMENT OF
HIGHER EDUCATION TRAINEES IN MEDICINE AND PHARMACY AT THE
MINISTRY OF HEALTH OF UKRAINE»**

Student ID									

Surname									

Variant 28

**TEST ITEMS
FOR THE UNIFIED STATE QUALIFICATION EXAM**

STAGE 1

ENGLISH LANGUAGE PROFICIENCY TEST

**Specialty
PHARMACY, INDUSTRIAL PHARMACY**

**Specialization
« INDUSTRIAL PHARMACY »**



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Each test item has several possible answers. Only one of them is correct. Mark the correct answer in your answer sheet in the corresponding column.

COMPLETED BY: _____
85

Be very careful when filling in your answer sheet.
FOR THE UNIFIED STATE QUALIFICATION EXAM

TEST ITEMS FOR THE UNIFIED STATE QUALIFICATION EXAM, STAGE 1, ENGLISH
LANGUAGE PROFICIENCY TEST, SPECIALTY «PHARMACY, INDUSTRIAL
PHARMACY», SPECIALIZATION «INDUSTRIAL PHARMACY»

ENGLISH LANGUAGE PROFICIENCY TEST

Specialty

PHARMACY, INDUSTRIAL PHARMACY

Specialization

«INDUSTRIAL PHARMACY»

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I. Read the text and answer 10 questions to it.

Psychology

Psychology - a term derived from the Greek *psychologia*, meaning "study of the soul" - was in its infancy in the 1870s, when Austrian neurologist Sigmund Freud studied medicine in Vienna. A few notable European physicians, such as Wilhelm Wundt in Germany, had begun to work in the new area of experimental psychology and were studying the senses and nerves in a bid to discover how the brain processes information. Freud, however, grew more interested in exploring the non-physical roots of mental disorders, a field he later called psychoanalysis. French neurologist Jean-Martin Charcot, who used hypnosis to treat a condition then known as hysteria, was a key early influence. In 1885, Freud spent 19 weeks in Paris working under Charcot, who introduced him to the idea that the source of mental disorders lay in the mind - the domain of thought and consciousness - rather than in the physical brain. Returning to Vienna, Freud began a partnership with Austrian physician Josef Breuer, who became his mentor. He was particularly fascinated by the case of Anna O, a pseudonym for Bertha Pappenheim. She suffered from hysteria, displaying symptoms including paralysis, convulsions, and hallucinations that had baffled other doctors. After a series of sessions with Breuer during which she freely expressed any thought that came into her mind, she had begun to improve. Breuer termed this "the talking cure". It transpired that Anna O's symptoms had emerged during her father's long, terminal illness. The anxiety this provoked had, among her other symptoms, prompted an aversion to liquids - seemingly the result of a repressed childhood memory of a dog drinking from her glass. It was evident that her talks with Breuer had revealed previously hidden emotions and painful memories and that voicing them had effected her cure. Freud wrote about Anna O in his 1895 *Studies on Hysteria*, in which he proposed that repressed conflicts manifest themselves physically. This, in turn, led him to suggest there were three levels of the human mind: the conscious, preconscious, and unconscious. To describe the three levels, the analogy of an iceberg is often used. The tip of the iceberg, visible on the water's surface, represents the conscious mind - the thoughts and feelings that a patient is aware of and understands. Residing just beneath the conscious mind is the preconscious mind, which contains memories and knowledge that a person can easily access. At the deepest level of the iceberg, and occupying the largest area, lies the unconscious mind. For Freud, this area was a sealed chamber of repressed emotions, primitive desires, violent impulses, and fears.

1. What was the term Josef Breuer used to describe the treatment that helped Anna O?

- A. Psychoanalysis
- B. Electroshock therapy
- C. Hypnotherapy
- D. The talking cure

2. What triggered Anna O's aversion to liquids, according to Freud and Breuer's analysis?

- A. A childhood incident involving a dog
- B. A fear of drowning
- C. A reaction to medication
- D. A traumatic experience with fire

3. What was the treatment approach used by Jean-Martin Charcot to address hysteria?

- A. Hypnosis
- B. Cognitive therapy
- C. Surgery
- D. Medication

4. Choose the correct statement:

- A. Freud's model of the mind includes the conscious, preconscious, and unconscious levels
- B. Freud's "Studies on Hysteria" suggested that all mental disorders are caused by physical brain damage
- C. The preconscious mind, according to Freud, holds thoughts and feelings that are not easily accessed
- D. Freud believed that repressed memories have no impact on a person's physical health

5. Choose the correct statement:

- A. Freud believed that the conscious mind is where repressed emotions are stored
- B. The iceberg analogy used by Freud indicated that the conscious mind is the largest and most influential part of the mind
- C. Freud's theory was based entirely on experiments with animals
- D. Freud's work suggested that physical symptoms could be a result of unresolved emotional conflicts

6. Freud was solely interested in the physical causes of mental disorders.

- A. True
- B. Not given
- C. False

7. Who was a significant influence on Freud, introducing him to the idea that mental disorders originate in the mind?

- A. Anna O
- B. Jean-Martin Charcot
- C. Wilhelm Wundt
- D. Josef Breuer

8. According to Freud, what does the unconscious mind contain?

- A. Recent memories and facts
- B. Logical thoughts and reasoning
- C. Repressed emotions, desires, and fears
- D. Everyday decisions and choices

9. What did Freud propose in his "Studies on Hysteria" about repressed conflicts?

- A. They are easily resolved
- B. They manifest physically
- C. They have no impact on the body
- D. They disappear over time

10. Which field did Freud become more interested in during his studies?

- A. Neurology
- B. Psychoanalysis
- C. Brain surgery
- D. Experimental psychology

II. Choose the right answer.

11. What product forms as a result of cyclotrimerization of acetylene, occurring in the presence of organonickel catalysts?

- A. Vinylacetylene
- B. Benzene
- C. 1,3,5-Trimethylbenzene
- D. Cyclooctatetraene
- E. Toluene

12. What reagent is used as the oxidant in the Wagner reaction?

- A. $HMnO_4$
- B. K_2MnO_4
- C. $MnCl_2$
- D. MnO_2
- E. $KMnO_4$

13. A pharmaceutical factory produces drugs that normalize water-salt metabolism. What substance among the listed ones has the highest boiling point, if it is taken as a 0.01 M solution?

- A. KCl
- B. $CaCl_2$
- C. $NaCl$
- D. $Al_2(SO_4)_3$
- E. $MgSO_4$

14. Select from the list the most efficient mixers for continuous extraction.

- A. Curved pipes
- B. Injectors
- C. Reactors with stirrers
- D. Cyclone separators
- E. Turbine mixers

15. One method of obtaining genes is synthesis using reverse transcriptase. What group of viruses contains this enzyme?

- A. Single-stranded DNA viruses
- B. RNA viruses
- C. Sulfolobus SNDV-like viruses
- D. Double-stranded DNA viruses
- E. —

16. What cations, according to the State Pharmacopoeia of Ukraine, can be identified in medicines using the reaction of formation of orange-red sulfide precipitates with their subsequent dissolution in alkalis?

- A. Aluminum cations
- B. Stibium cations
- C. Silver cations
- D. Manganese cations
- E. Magnesium cations

17. What disperse system has a gaseous dispersed phase and a liquid continuous medium?

- A. Emulsion
- B. Suspension
- C. Foam
- D. Sol
- E. Gel

18. Select from the list a non-reducing disaccharide.

- A. Inulin
- B. Cellobiose
- C. Sucrose
- D. Lactose
- E. Maltose

19. Pre-mRNA is synthesized in the process of eukaryotic DNA transcription and contains non-informative nucleotide sequences. Name these sequences.

- A. Introns
- B. Transcripts
- C. Anticodons
- D. Codons
- E. Exons

20. How will the efficiency of an evaporator with a dilute solution change, if the heat transfer coefficient decreases 1.2 times due to formation of a scale layer, with all other things being equal?

- A. 1.2 times decrease
- B. 1.44 times decrease
- C. 1.44 times increase
- D. No change
- E. 1.2 times increase

21. What thermal similarity criterion characterizes the similarity of heat transfer at the interface between a wall and a fluid flow?

- A. Fourier number
- B. Nusselt number
- C. Prandtl number
- D. Peclet number
- E. Reynolds number

22. What Reynolds number allows observing a stable, fully developed, turbulent flow regime?

- A. $Re > 10000$
- B. $Re > 4000$
- C. $Re > 9000$
- D. $Re > 5000$
- E. $Re > 7000$

23. What standard solution is used in iodometry, when determining strong oxidizing agents?

- A. Potassium dichromate solution
- B. Sodium thiosulfate solution
- C. Sodium hydroxide solution
- D. Potassium bromate solution
- E. Potassium permanganate solution

24. At what phase of the growth curve of a periodical culture of microorganisms does the adaptation of inoculum cells to the culture medium occur?

- A. Slow growth phase
- B. Lag phase
- C. Accelerated growth phase
- D. Stationary phase
- E. Logarithmic phase

25. What amino acid is a nonpolar one?

- A. Asparagine
- B. Histidine
- C. Arginine
- D. Lysine
- E. Leucine

26. What type of chemical bond connects the atoms in the ethane molecule ($CH_3 - CH_3$)?

- A. Donor-acceptor bond
- B. Polar covalent bond
- C. Hydrogen bond
- D. Nonpolar covalent bond
- E. Semipolar bond

27. In microbiological production, producer strains are used to obtain bioactive substances. What ability is the main requirement for a producer strain?

- A. Reproducing under high hydrostatic pressure
- B. Synthesis of target products
- C. Growth at low temperatures
- D. Growth at low pH values
- E. Formation of complex colonies

28. What product results from cyclotrimerization of propyne?

- A. 1,2,3-Trimethylbenzene
- B. Benzene
- C. Methylbenzene
- D. 1,3-Dimethylbenzene
- E. 1,3,5-Trimethylbenzene

29. When is it advisable to use periodical reject separators for clarification of suspensions?

A. Suspension with the solid phase content under 10% and the particle diameter of 0.1 mcm or more

B. Suspension with the solid phase content of 0.5% or more and the particle diameter under 1 mcm

C. Suspension with the solid phase content under 5% and the particle diameter of 1 mcm or more

D. Suspension with the solid phase content of 5% or more and the particle diameter of 0.1 mcm or more

E. Suspension with the solid phase content under 0.5% and the particle diameter 0.1 mcm or more

30. The titrant in complexonometry (trilonometry) method — a sodium edetate solution — is prepared as a secondary standard solution. What standard substance can be used to determine its exact concentration?

A. Oxalic acid

B. Potassium dichromate

C. Potassium chloride

D. Sodium carbonate

E. Metallic zinc

31. The titrant in nitritometry method — a 0.1 mol/dm³ solution of NaNO_2 — is prepared as a secondary standard solution. What substance is used to standardize the sodium nitrite solution?

A. Hydrochloric acid

B. Succinic acid

C. Acetic acid

D. Oxalic acid

E. Sulfanilic acid

32. What is the order of a chemical reaction, if its rate does not depend on the concentration of the reactants?

A. Third order reaction

B. Zero order reaction

C. Fractional order reaction

D. Second order reaction

E. First order reaction

33. The microorganism grows and develops in the thick of a liquid nutrient medium, through which sterile air is being continuously supplied (the nutrient medium is being constantly mixed). What is this process called?

A. Layered cultivation

B. Deep cultivation

C. Thin-layer cultivation

D. Surface cultivation

E. Monolayer cultivation

34. What conditions are necessary for hydrogenation of unsaturated organic compounds?

A. H_2SO_4 , t

B. $\text{K}_2\text{Cr}_2\text{O}_7$, H^+

C. H_2 , Ni, t

D. HNO_3 , p, t

E. NaOH , H_2O

35. What equipment is used as centrifugal classifiers?

A. Hydrocyclones, separators

B. Separators, spiral classifiers

C. Hydrocyclones, centrifuges

D. —

E. Separators, cyclone separators

36. What stream contains the reflux that is being returned for irrigation to the rectifying

column?

- A. Distillate (rectificate)
- B. Pure high-boiling liquid
- C. Pure low-boiling liquid
- D. Boiler residue
- E. Initial mixture

37. A standard set of sieves is used to perform sieve analysis. Specify the diameters of the holes in these sieves.

- A. 2.0; 1.0; 0.55; 0.25; 0.2 mm
- B. 1.5; 1.0; 0.75; 0.5; 0.1 mm
- C. 2.0; 1.0; 0.5; 0.25; 0.1 mm
- D. 2.5; 2.0; 1.5; 0.5; 0.2 mm
- E. 3.0; 2.0; 1.5; 1.0; 0.5 mm

38. Select from the list an intensive parameter of a thermodynamic system.

- A. Entropy
- B. Temperature
- C. Enthalpy
- D. Mass
- E. Volume

39. How many degrees of freedom are there at the figurative point on the water phase diagram in the area corresponding with the existence of the gaseous phase?

- A. 4
- B. 1
- C. 0
- D. 3
- E. 2

40. What adsorption indicators are used in argentometric determination of iodides using the Fajans method?

- A. Ferroin and diphenylamine
- B. Eosin and fluorescein
- C. Murexide and dithizone
- D. Methyl orange and phenolphthalein
- E. Methyl blue and tropeolin OO

41. How will the heat load of a heat exchanger change in the process of heat exchange in a pipe, if its inner diameter is increased to twice the size?

- A. 2 times decrease
- B. 4 times increase
- C. —
- D. 4 times decrease
- E. 2 times increase

42. What optical method of analysis is based on measuring the intensity of the light that has passed through a scattering medium?

- A. Refractometry
- B. Turbidimetry
- C. Coulometry
- D. Interference
- E. Polarimetry

43. Citrate ions and calcium cations form calcium citrate precipitate, when boiled in a neutral medium. What would be the color of the resulting precipitate?

- A. Blue
- B. White
- C. Red
- D. Yellow
- E. Brown

44. In what reaction does the entropy increase, if all its reactants and products are in the

gaseous state?

- A. $2H_2S + 3O_2 = 2SO_2 + 2H_2O$
- B. $H_2 + Cl_2 = 2HCl$
- C. $3O_2 = 2O_3$
- D. $2O_3 = 3O_2$
- E. $CH_4 + 2O_2 = CO_2 + 2H_2O$

45. What stage of protein biosynthesis is inhibited by tetracyclines?

- A. Replication
- B. Transcription
- C. Reverse transcription
- D. Translation
- E. Folding

46. Select from the list a redox electrode.

- A. Calomel electrode
- B. Glass electrode
- C. Quinhydrone electrode
- D. Hydrogen electrode
- E. Silver chloride electrode

47. What parameter determines the productivity of a sedimentation tank?

- A. Altitude
- B. Particle diameter
- C. Sedimentation surface
- D. Sedimentation rate and particle density
- E. Sedimentation rate and sedimentation surface

48. In what method of separating heterogeneous systems does the dispersed phase separate from the continuous phase under the effect of gravity alone?

- A. Filtering
- B. Precipitation
- C. Centrifugation
- D. Sedimentation
- E. Wet separation

49. What amino acid was the first to be produced by microbial synthesis using bacteria of the *Corynebacterium* genus?

- A. Glutamic acid
- B. Aspartic acid
- C. Threonine
- D. Tyrosine
- E. Phenylalanine

50. What criterion is used to assess the intensity of mixing?

- A. Le Chatelier principle
- B. —
- C. Basic kinetic law
- D. Reynolds number
- E. Gibbs phase rule

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State Non-profit Enterprise «Testing Board for Professional Competence Assessment of Higher
Education Trainees in Medicine and Pharmacy at the Ministry of Health of Ukraine»

Approved for printing on May 16, 2025 № 01/02/47. Paper size 60x84 1/8.
Offset paper. Typeface Times New Roman Cyr. Offset printing.
Printer's sheets 8. Publisher's sheets 12.

INSTRUCTIONS

Each test item has several answer options. Choose only **ONE** answer that you think is the **BEST** one and mark it in your answer sheet by filling the oval with the corresponding Latin letter. Fill the oval **COMPLETELY**, so that its area is fully colored.

Be very careful when filling in your answer sheet!

Several answers to one test item or no answer will be considered an incorrect answer.