國立中興大學115學年度

學士後醫學系公費生招生考試

英文科試題

考試時間：80分鐘

考試開始鈴響前，不得翻閱試題，且不得書寫、劃記、作答!
本考試不得使用計算機

考生請注意：

一、考生應確實關閉行動電話(或取出電池)及手錶之鬧鈴設定；除准考證及考試必需用品外，所有物品(含行動電話、穿戴式裝置等)均應立即放置於臨時置物區，不得發出聲響或有影響試場秩序之情形。

二、請確認抽屜中、桌椅下、座位旁均無其他非必要用品。如有任何問題請立即舉手反映。

三、坐定後，雙手離開桌面，請核對並確認准考證、座位標籤、及答案卡上之准考證號碼是否完全相同。如有錯誤，應立即舉手請監試人員處理。

四、考生應試時不得飲食、飲水、抽菸、嚼食口香糖。

五、答案卡劃記以2B鉛筆為佳，劃記時要粗黑、清晰，劃滿作答格，不可出格，不得折損答案卡，修正作答以軟性橡皮擦擦拭乾淨，且不得使用修正液(帶)修正，未遵照正確作答方式而致機器無法正確辨識答案者，考生自行負責，不得以任何理由補救。答案寫在試題紙上者不予計分。

六、本試題必須與答案卡一併繳回，不得攜出試場。

選擇題：50題，每題2分，總分100分。答錯1題倒扣0.5分，倒扣至總分零分為止；未作答，不給分亦不扣分。

1. After the rain stopped, the sun began to ____ from behind the dark clouds.
(A) emerge
(B) conceal
(C) vanish
(D) sweep

2. Moving to a new country was a ____ change for the family, but they eventually felt at home.
(A) drastic
(B) trivial
(C) nonchalant
(D) brittle

3. The company decided to ____ the old building and replace it with a modern park.
(A) envision
(B) demolish
(C) preserve
(D) inhabit

4. The treatment aims to _____ kidney function to its normal, fully healthy state.
(A) restore
(B) replace
(C) prevent
(D) improve

5. If laboratory samples are not handled properly, they may become _____ and give inaccurate results.
(A) purified
(B) isolated
(C) sterilized
(D) contaminated

6. Poor _____ with prescribed medications and lifestyle changes reduced the effectiveness of the treatment.
(A) potency
(B) regulation
(C) compliance
(D) composition

7. Long-standing high blood pressure, known as _____, significantly increases the risk of cardiovascular disease.
(A) obesity
(B) diabetes
(C) hypertension
(D) inflammation

8. All laboratory _____ was sterilized prior to the experiment.
(A) modules
(B) protocols

(C) formulas
(D) apparatus

9. A ***diffuse*** rash appeared across the patient's torso. What does ***diffuse*** most nearly mean here?
(A) Localized
(B) Widespread
(C) Recurrent
(D) Discolored

10. The patient showed improvement after _____ treatments administered in sequence, indicating a positive response to therapy.
(A) successive
(B) simultaneous
(C) sporadic
(D) isolated

11. The vaccine uses a ***conjugate*** protein, in which a polysaccharide antigen is covalently attached to a protein carrier, to enhance the immune response. What does ***conjugate*** most nearly mean here?
(A) Fragmented into smaller components
(B) Chemically linked to another molecule
(C) Attenuated to reduce pathogenicity
(D) Purified from other components

12. This mutation is known to _____ resistance, giving the organism a new ability to survive antibiotic treatment.
(A) boost
(B) confer
(C) increase
(D) enhance

13. Endocrine cells _____ hormones directly into the bloodstream as part of their normal function, rather than through ducts.
(A) inject
(B) secrete
(C) implant
(D) administer

14. In a chemical reaction, the solution remained _____, with a pH of seven.
(A) basic
(B) neutral
(C) acidic
(D) reactive

15. The patient reported ***abdominal*** discomfort after the procedure, including cramping and tenderness in the area below the ribs. What does ***abdominal*** most nearly mean here?
(A) Concerning digestion
(B) Concerning the lower back
(C) Concerning internal organs
(D) Concerning the stomach area

16. Damage to the ***spinal*** cord can result in paralysis or loss of movement. What does ***spinal*** most nearly mean?
(A) Related to muscles that produce body movement
(B) Related to the brain and higher mental processes
(C) Related to the backbone and the cord of nerves it protects
(D) Related to nerves throughout the body that transmit signals

17. The patient shows signs of ***renal*** impairment, including reduced urine output, swelling in the legs, and elevated creatinine levels. What does ***renal*** most nearly mean here?
(A) Kidney-related
(B) Urinary-related
(C) Bladder-related
(D) Liver-related

18. Smoking causes progressive damage to _____ endothelium of arteries and veins, increasing cardiovascular risk.
(A) neural
(B) vascular
(C) epithelial
(D) muscular

19. To prevent infection, the surgical field must remain completely _____, free from any microorganisms, throughout the procedure.
(A) isolated
(B) clean
(C) sealed
(D) sterile

20. The diagram clearly _____ the anatomy of the human heart, making it easier for students to understand.
(A) hides
(B) depicts
(C) ignores
(D) obscures

21. Genetic testing identified an enzyme _____ that prevented normal metabolic processing of amino acids.
(A) defect
(B) duplication
(C) enhancement
(D) overproduction

22. The thyroid _____ plays a central role in regulating metabolic rate.
(A) gland
(B) vessel
(C) tissue
(D) organelle

23. Reduced peripheral _____ can delay wound healing in diabetic patients.
(A) texture
(B) transfer
(C) polarity
(D) circulation

24. The scientist had to ____ the data carefully to make sure the results were accurate.
(A) mimic
(B) analyze
(C) abandon
(D) invent

25. The study covered a time _____ of ten years, tracking patient outcomes from 2010 to 2020.
(A) span
(B) gap
(C) pause
(D) rupture

26. The biopsy specimen was sent to the laboratory for _____ to identify the underlying disease processes at the cellular level.
(A) pathology examination
(B) diagnostic examination
(C) laboratory analysis
(D) chemical assay

27. The virus primarily targets the _____ tract, causing cough and shortness of breath.
(A) respiratory
(B) circulatory
(C) digestive
(D) immune

28. Before administration, the drug must be _____ with saline to achieve the correct concentration. Select the word that best completes the sentence.
(A) diluted
(B) scattered
(C) weakened
(D) dispersed

29. Exposure to certain drugs may interfere with _____ development during early pregnancy.
(A) fetal
(B) embryo
(C) neonatal
(D) postnatal

30. Researchers _____ that the new drug may reduce inflammation in elderly patients, forming a preliminary hypothesis for further study.
(A) ignore
(B) dismiss
(C) postulate
(D) observe

31. In a lab experiment, a specific chemical _____ is added to a solution to produce a visible change if the target substance is present.
(A) solvent
(B) enzyme
(C) reagent
(D) catalyst

32. A single-base _____ in the DNA sequence caused a small change in the protein, which may alter its normal function in the body.
(A) enzyme
(B) protein
(C) mutation
(D) chromosome

33. Gene _____ is the process in which information from DNA is copied into another form so it can be used later in the cell.
(A) alteration
(B) replication
(C) translation
(D) transcription

34. She has a ____ memory and can remember every detail of a book after reading it once.
(A) frantic
(B) phenomenal
(C) drowsy
(D) shallow

35. The disease affects several _____ regions of the brain rather than a continuous area.
(A) vague
(B) continuous
(C) overlapping
(D) discrete

The integration of Artificial Intelligence (AI) into healthcare is no longer a futuristic concept but a rapidly unfolding reality. One of the most __36__ applications is in the field of diagnostic imaging. By training on millions of clinical images, AI algorithms can now identify patterns that are virtually __37__ to the human eye, leading to much earlier detection of life-threatening conditions.

Beyond diagnostics, AI is significantly __38__ the pharmaceutical industry. Historically, drug discovery has been an __39__ endeavor, often taking over a decade and billions of dollars to bring a single medication to market. AI models can now predict how specific molecular structures will interact with biological targets, thereby __40__ the initial stages of research. This efficiency was particularly __41__ during the recent global efforts to develop vaccines at record speed.

However, this technological shift is not without its __42__. As healthcare providers become increasingly dependent on automated systems, questions regarding data privacy and "algorithmic bias" have surfaced. If the data used to train AI is not diverse, the resulting tools may provide __43__ outcomes for certain demographic groups. Therefore, it is __44__ that developers and medical professionals work together to ensure these systems are both transparent and __45__. The goal remains a synergy between human empathy and machine precision.

36. (A) stagnant (B) prominent (C) trivial (D) obsolete
37. (A) visible (B) vulnerable (C) imperceptible (D) impractical
38. (A) revolutionizing (B) diminishing (C) mimicking (D) pardoning
39. (A) immediate (B) explicit (C) arduous (D) offensive
40. (A) obstructing (B) streamlining (C) complicating (D) exhausting
41. (A) significant (B) obscure (C) indifferent (D) redundant
42. (A) breakthroughs (B) incentives (C) demerits (D) tragedies
43. (A) consistent (B) skewed (C) universal (D) objective
44. (A) optional (B) peripheral (C) imperative (D) superficial
45. (A) equitable (B) arbitrary (C) hostile (D) volatile

Read the following passages and answer questions 46 to 50.

Vaccines (Question 46-50)

Vaccines are biological preparations that help your body's immune system recognize and defend itself against harmful germs. They can be administered in various forms, including injections, liquids, pills, or nasal sprays. Vaccines protect against illnesses caused by viruses, such as influenza and COVID-19, as well as bacterial infections like tetanus, diphtheria, and pertussis. The main purpose of vaccination is to stimulate the immune system in a controlled way, so that it can respond effectively if the body encounters the actual disease in the future.

There are several types of vaccines, each working through different mechanisms to generate immunity. Live-attenuated vaccines contain a weakened form of the germ that cannot cause severe illness but still prompts an immune response. Inactivated vaccines use germs that have been killed, making them safe while still teaching the immune system to recognize the pathogen. Other vaccines, such as subunit, recombinant, polysaccharide, and conjugate vaccines, contain only specific components of the germ, such as proteins, sugars, or the outer casing. Toxoid vaccines use inactivated toxins produced by certain bacteria to trigger immunity, while more recent innovations, including mRNA vaccines, deliver genetic instructions to the body's cells to produce a harmless piece of the pathogen, prompting an immune response. Viral vector vaccines also employ genetic material from a germ, but this material is delivered using a harmless virus that facilitates entry into cells. Despite the differences in design, all vaccines function by eliciting an immune response that allows the body to recognize and fight off harmful substances, known as antigens.

When the body encounters a germ, it identifies the invader as foreign and activates the immune system to combat it. The immune system not only neutralizes the germ during the initial encounter but also retains a memory of the pathogen. **This memory** ensures that if the germ enters the body again, the immune system can respond more quickly and effectively. The protection gained from this process is referred to as immunity. Immunization is the broader process of becoming protected against a disease, and vaccination is one of the primary methods to achieve immunization, ensuring that individuals can develop immunity safely without suffering from the actual illness.

The importance of vaccines extends beyond individual protection. Vaccines prevent serious diseases more safely than acquiring immunity through natural infection, and in some cases, vaccination can produce a stronger or more reliable immune response than surviving the disease itself. Additionally, vaccines contribute to community health through what is called community immunity, or **herd immunity**. This concept is based on the idea that when a significant portion of a population is immunized, the spread of contagious diseases is reduced, protecting those who are unable to receive vaccines, such as individuals with weakened immune systems, people with specific allergies, or newborn babies who are too young for certain immunizations. By limiting disease transmission, community immunity helps prevent outbreaks and safeguards vulnerable populations.

Vaccines are rigorously tested for safety before they are approved for use. Regulatory agencies in the United States, such as the Food and Drug Administration (FDA), require extensive evaluation to ensure that vaccines are both safe and effective. In addition to safety, it is important to follow recommended vaccine schedules. These schedules, published by the Centers for Disease Control and Prevention (CDC), indicate which vaccines are recommended for different age groups, the number of doses required, and the optimal timing for administration. Adhering to the recommended schedule allows individuals, both children and adults, to receive protection at the most appropriate times, ensuring that immunity develops when it is most needed.

In summary, vaccines are essential tools in modern medicine, offering protection against a wide range of infectious diseases. They work by teaching the immune system to recognize harmful germs and respond quickly to prevent illness. By following recommended vaccination schedules, individuals not only protect themselves but also contribute to the health and safety of their communities. With decades of rigorous safety testing and scientific evidence supporting their effectiveness, vaccines remain a cornerstone of public health, reducing disease burden and preventing potential outbreaks worldwide.

46. What is the main purpose of the passage?
(A) To compare traditional vaccines with experimental treatments.
(B) To explain how vaccines work and their role in public health.
(C) To describe the history of vaccine development in the United States.
(D) To argue against natural immunity through infection.

47. According to the passage, which vaccine type delivers genetic instructions to human cells to produce part of a pathogen?
(A) Live-attenuated vaccines
(B) Toxoid vaccines
(C) Viral vector vaccines
(D) mRNA vaccines

48. What can be inferred about people who cannot receive vaccines?
(A) They are unlikely to be exposed to infectious diseases.
(B) They depend partly on others being vaccinated for protection.
(C) They usually develop stronger natural immunity.
(D) They are excluded from public health planning.

49. In the passage, the term **"herd immunity"** most nearly refers to:
(A) Immunity developed after recovering from a disease
(B) Reduction in infections within hospitals due to precautions
(C) Fewer outbreaks in the community due to high immunity
(D) Legal requirements for vaccination in a community

50. In paragraph 3, the phrase **"this memory"** refers to:
(A) Initial immune response
(B) Vaccine genetic material
(C) Pathogen recognition
(D) Standard immunization schedule