

一、選擇題：

(每小題 2 分，共 30 分，有單選題及複選題，請標明題號，作答於答案紙上，複選題需全部答對才計分。)

1. Which of the following is able to cross the placenta, thus giving protection to newborns?  
(A) IgA (B) IgD (C) IgE (D) IgG
2. Which of the following occurs in response to a transfusion with the wrong type of blood?  
(A) anaphylactic reaction (B) cytotoxic reaction (C) delayed type hypersensitivity reaction  
(D) immune complex-mediated hypersensitivity
3. Which of the following provides long term immunity? (A) artificially acquired active immunity (B) artificially acquired passive immunity (C) naturally acquired active immunity (D) naturally acquired passive immunity.
4. Which description is not right for R factor? (A) circular ds-DNA (B) extrachromosomal DNA (C) responsible for drug resistance (D) responsible for transduction
5. A microscope that has a total magnification of 1,500X with the oil immersion lens has an ocular of what power? (A) 150X (B) 10X (C) 15X (D) 30X
6. Metachromatic granules are concentrated crystals of (A) glycogen (B) sulfur (C) nitrogen (D) polyphosphate
7. Mesosomes are internal extensions of (A) cell wall (B) capsule (C) inner membrane (D) outer membrane
8. Which of the following are primarily zoonoses? (A) tularemia (B) brucellosis (C) dengue fever virus (D) Influenza
9. Which is not an inflammatory cytokine? (A) C3a (B) TNF- $\alpha$  (C) IFN- $\gamma$  (D) histamine
10. Which is the major characteristic of specific immunity? (A) specificity (B) memory (C) recognition of self and non-self antigen (D) diversity
11. Which of the following are not found in cyanobacteria? (A) chloroplast (B) thylakoid (C) photosystem I (D) photosystem II
12. Acyclovir is (A) an antibiotic (B) an anti-fungus drug (C) a disinfectant (D) an anti-herpes virus drug
13. Which of the following is not an antibiotic? (A) sulfonamide (B) penicillin (C) vancomycin (D) streptomycin
14. Which of the following represents a final electron acceptor reaction? (A)  $\text{H}_2\text{S} \rightarrow \text{SO}_4^{2-}$  (B)  $\text{NO}_3^- \rightarrow \text{NO}_2^-$  (C)  $\text{FeSO}_4 \rightarrow \text{Fe}_2(\text{SO}_4)_3$  (D)  $\text{NH}_3 \rightarrow \text{NO}_2^-$
15. Which of the following descriptions is not right for "group translocation"? (A) an active transport (B) energy-required transport (C) a common transport for many types of sugars (D) transported molecules are not modified during passage.

(背面仍有題目,請繼續作答)

二、解釋名詞（每小題 2 分，共 20 分，請標明題號）

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|----------------------|-------------------------------|
| 1. chemoautotroph    | 6. DPT vaccine                |
| 2. quasi species     | 7. binary fission             |
| 3. LPS               | 8. Haemophilus influenzae     |
| 4. latent infection  | 9. Hepatitis C virus          |
| 5. live viral vector | 10. Mycobacteria tuberculosis |

三、問答題（每小題 10 分，共 50 分，請標明題號）

1. 說明 Interferon 之作用機制。
2. 繪圖說明病毒之生長曲線。
3. 說明免疫學之 Clonal selection theory。
4. 說明 DNA vaccine 之意義及其優缺點。
5. 如何鑑定病人受到 Hantaan virus 之感染？