國立嘉義大學九十六學年度
獸醫學系碩士班招生考試試題

科目：專業英文

I. Grammar : Please identify the ONE underlined word or phrase that MUST be changed in order for the sentence to be grammatically correct. Write your answers (A, B, C or D) on the answer sheet. **(10 X 4 points = 40 points)**

1. One out of one hundred pigs suffer congenital diseases.
   A B C D

2. The anatomy and physiological of upper respiratory tract tissues play a major
   A B C
   role in the response to a toxic insult.
   D

3. *Pasteurella multocida* exists in a variety of animals and cause diverse infections
   A B
   in humans due to animal bites and scratches.
   C D

4. It is hoped that immunotherapeutic agents, used in tandem or in combination,
   A
   may allows effective treatment of lymphoid malignancies and delay or even
   B C
   replace the need for conventional cytotoxic therapies.
   D

5. The threshold for the safe current was more higher than that reported for direct
   A B C D
   stimulation of neural tissues.

6. An animal study was subsequent conducted in pigs to determine whether the
   A B
   PCR-positive pig livers still contained infectious virus.
   C D

7. Prions spread via the autonomic nervous system from the gut to the central
   A
   nervous system in cattles incubating bovine spongiform encephalopathy.
   B C D

8. It is important to understand the role of structural proteins in the pathogenic,
   A B C
   immunogenicity and transmission of CSFV vaccine strains in pigs.
   D

9. Although translation and processing of the EMCV polyprotein were not
   A
   accelerated greatly by the dialysis system, but de novo synthesis of viral RNA
   B C
   was enhanced considerably by dialysis, leading to a higher titer of synthesized
   D
   EMCV.

10. The option to exploit CF mouse models for answer these questions is exciting
    A B
    in the light of the growing notion that defective serous gland function is a
    C
    primary manifestation of CF lung disease.

II. Reading: Please answer the following 5 questions in short English phrases or sentences according to the paragraph attached below enclosed in quotation marks **(5 X 4 points = 20 points)**

"Mortality in wild aquatic birds due to infection with highly pathogenic avian influenza viruses (HPAIV) is a rare event. During the recent outbreak of highly pathogenic avian influenza in Germany, mortality due to H5N1 HPAIV was observed among mute and whooper swans as part of a rapid spread of this virus. In contrast to earlier reports, swans appeared to be highly susceptible and represented the mainly affected species. We report gross and histopathology and distribution of influenza virus antigen in mute and whooper swans that died after natural infection with H5N1 HPAIV. At necropsy, the most reliable lesions were multifocal hemorrhagic necrosis in the pancreas, pulmonary congestion and edema, and subepicardial hemorrhages. Major histologic lesions were acute pancreatic necrosis, multifocal necrotizing hepatitis, and lymphoplasmacytic encephalitis with neuronal necrosis. Adrenals displayed consistently scattered cortical and medullary necrosis. In spleen and Peyer's patches, mild lymphocyte necrosis was present. Immunohistochemical demonstration of HPAIV nucleoprotein in pancreas, adrenals, liver, and brain was strongly consistent with histologic lesions. In the brain, a large number of neurons and glial cells, especially Purkinje cells, showed immunostaining. Occasionally, ependymal cells of the spinal cord were also positive. In the lungs, influenza virus antigen was identified in a few endothelial cells but not within pneumocytes. The infection of the

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central nervous system supports the view that the neurotropism of H5N1 HPAIV leads to nervous disturbances with loss of orientation. More investigations are necessary to clarify the mechanisms of the final circulatory failure, lung edema, and rapid death of the swans (Teifke JP *et al*. 2007. Vet Pathol 44:137-143)."

1. What does HPAIV stand for?

2. Which lesion was observed histologically in the liver of those swans died with H5N1 HPAIV infection?

3. In the brain, HPAIV nucleoprotein was detected mainly in which groups of cells by immunohistochemistry?

4. What characteristic of H5N1 HPAIV is believed to be a cause of nervous disturbances with loss of orientation?

5. Why swans were important subjects in this particular research project?

III. Translation (I): Please translate the following paragraph from English to 中文 **(1 X 20 points = 20 points).**

The keratinase may be slightly more active than proteinase K in degrading polymeric Sup35NM when they were at the same level of enzyme units. More studies will be needed to determine the difference in activity of these two enzymes against prions. More importantly, both enzymes produced defined patterns of degradation products or fragments, and they are different. This indicated that the cleavage sites of keratinase and proteinase K are specific and different. It will be of interest to identify these enzyme-specific cleavage sequences. The incomplete digestion can provide a characteristic marker of Sup35NM as the surrogate protein of prions.

IV. Translation (II): Please translate the following paragraph from 中文 to English **(1 X 20 = 20 points).**

「萎縮」意指某器官或組織比原來的大小較為縮小，其原因常是後天性造成的，其定義和先天性所造成的「發育不全」不同。後者是某器官或組織生長的不完全而沒有發育到正常大小。