國立嘉義大學九十四學年度
獸醫學系碩士班招生考試試題

科目：專業英文

I. Logical structure of abstract. (20%)

An abstract containing 7 sentences, is selected from the article, “Detection and genetic characterization of porcine circovirus type 2 (PCV2) in pigs from Croatia” published by L. Jemersic in the journal, “Research of Veterinary Science” in 2004. Those 7 sentences below are now randomly distributed and named as A through G. In your answer sheet, please re-arrange those sentences in a logical order to fulfill its original feature. For example: C→A→G→D→B→E→F . Hint: E is the last sentence of this abstract.

A. The signs were consistent with PMWS and PDNS.

B. The PCR results obtained from PCV2 specific oligonucleotide primers confirmed a PCV2 infection.

C. Porcine circovirus type 2 (PCV2) from the *Circoviridae* family has recently been associated with two serious diseases of swine, post-weaning multisystemic wasting syndrome (PMWS) and porcine dermatitis and nephropathy syndrome (PDNS).

D. Apart from progressive weight loss, pneumonia and/or diarrhoea, multifocal erythematous skin lesions and dermal necrosis were also observed.

E. For a better epizootiological understanding, genetic typing of representative isolates was carried out and compared with available isolates reported in the GenBank databases.

F. During 2002, several outbreaks of clinical disease in pigs with weights ranging from 10 to 70 kg occurred on four farms in different locations in Croatia.

G. In addition, archive samples that were classical swine fever virus positive and derived from domestic pigs during an outbreak in 1997 were included in this study and one out of the three isolates was found to be positive for PCV2.

II. Please translate the following paragraphs from English to Chinese. (60%)

1. High-level streptomycin (SM) resistance in *Mycobacterium tuberculosis* (MTB) is associated with alterations of the ribosomal target site resulting from mutations in the *rpsL* gene of the S12 ribosomal protein or in the 530 or 915 region of the *rrs* gene of the 16S rRNA . In *Escherichia coli*, ribosomal binding of kanamycin (KM) is affected by mutation in the 1400 region of the *rrs* gene, and mutations in this region produce resistance to various aminoglycosides. We had identified an A1400G mutation in the *rrs* gene in a KM-resistant strain of MTB. To study further the mechanism(s) of AK-KM resistance, we selected several standard AK-resistant mutants of MTB and characterized the 1400 region of the *rrs* gene in these mutants and in clinical isolates of MTB resistant to AK-KM. (20 points)

2. Hemostatic mechanisms play an important role in atherogenesis as well as the eventual thrombus formation involved in the end stage manifestations of the disease such as coronary artery occlusion. This pathogenic role is best understood in the context of the "response to injury" hypothesis which postulates that the initiation and progression of the atherosclerotic lesion is driven by the multifaceted response to the initial injury by, for example, lipid damage to the vessel wall. Part of the response to injury is stimulation of the hemostatic system. Epidemiologic evidence over the past decade have firmly linked hemostatic mechanisms with atherogenesis. The precise mechanistic links between the hemostatic response and atherogenesis remain to be fully elucidated and are a focus of intense investigation. (20 points)

3. It has been shown that the heat labile toxin IIa (LTIIa) gene from enterotoxigenic *E. coli* can serve as a reliable indicator of cattle fecal contamination. Although this toxin gene has on rare occasions been associated with other mammals such as pigs or humans, it is on the whole endemic to cattle. As such, the LTIIa toxin gene is used as an indicator of cattle fecal contamination because 1) it is relatively species-specific, 2) its nucleotide sequence is unique to cattle, and 3) LTIIa is relatively non-homologous with other toxin genes, specifically cholera toxin and LTI toxin genes which share some similarities with the LTIIa gene. (20 points)

III. Please translate the following paragraph from Chinese to English. (20%)

很多潛在性的代謝性疾病如腎上腺皮質功能亢進(hyperadrenocorticism)和甲狀腺功能低下(hypothyroidism)會影響皮膚及其它的器官系統，因此在尋找皮膚問題的病因時，必須小心對動物進行全身檢查。除此之外，甲狀腺功能低下也是造成患畜肥胖的原因之一。