

Xi'anJiaotong-LiverpoolUniversity

西交利物浦大学

PAPER CODE	EXAMINER	DEPARTMENT	TEL
CSE108		Computer Science and Software Engineering	

2nd SEMESTER 2017/18 RESIT EXAMINATIONS

BACHELOR DEGREE – Year 2

Operating Systems Concepts

TIME ALLOWED: 2 Hours

INSTRUCTIONS TO CANDIDATES

- 1、 Total marks available are 100.
- 2、 Answer all questions.
- 3、 The number in the column on the right indicates the marks for each question.
- 4、 Answer should be written in the answer booklet(s) provided.
- 5、 The university approved calculator - Casio FS82ES/83ES can be used.
- 6、 All the answers must be in English.

1. Explain the following terms:

1.1 Monitor. (10 marks)

1.2 Direct memory access. (10 marks)

2. How do caches help improve performance? (5 marks) Why do systems not use more or larger caches if they are so useful? (5 marks)

3. Name two differences between logical and physical addresses. (10 marks)

4. Consider a disk queue holding requests to the following cylinders in the listed order: 23, 45, 123, 67, 33, 11, 99. Assume the disk head is at cylinder 33 and moving downward through the cylinders

4.1 Using the First Come First Serve scheduling algorithm, what is the order that the requests are serviced? (10 marks)

4.2 Using the SCAN scheduling algorithm, what is the order that the requests are serviced? (10 marks)

5. The CBC-MAC construction builds a MAC function from a block cipher by taking the last encrypted block of the CBC-mode encryption. Can we similarly invent an ECB-MAC or an OFB-MAC and obtain secure constructions? (40 marks)

END OF EXAM PAPER