

元智大學 102 學年度研究所 碩士班 招生試題卷

系(所)別： 資訊管理學系碩
士班

組別： 資科組

科目： 計算機概論

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●不可使用電子計算機

1. (30%) Explain the following terms.

- (1) Application Programming Interface (API)
- (2) Breakpoint (in programming)
- (3) One time password
- (4) Deadlock prevention
- (5) Big Data

2. (10%) Explain the following function.

```
void whoami(int& a, int& b)
{
    int t;

    t=a;
    a=b;
    b=t;
}
```

3. (10%) What is the output of the following code slice? Explain your answer.

```
class Car
{
    int speed;
public:
    void start() { speed = 10; }
    void start(int x) { speed += x; }
    void accelerate() {speed +=0; }
    void accelerate(int y) { speed += 10; }
    void accelerate(double z) { speed +=z; }
    void print() { printf("%d", speed); }
};

int _tmain(int argc, _TCHAR* argv[])
{
    Car ford;
    ford.start();
    ford.accelerate(30);
    ford.accelerate();
    ford.accelerate(30.5);
    ford.print();
    system("pause");
    return 0;
}
```

4. (10%) Write a program code to implement a *sequential search* algorithm.

5. (1) (10%) Write a pseudo code to describe Tower of Hanoi algorithm.
(2) (10%) List the order of each movement of the algorithm with 3 plates.

6. (20%) Given a stack S , use the *push/pop* operation to add/delete an element into/from S , and output the number of elements that have been added/deleted. Write a sample program code.