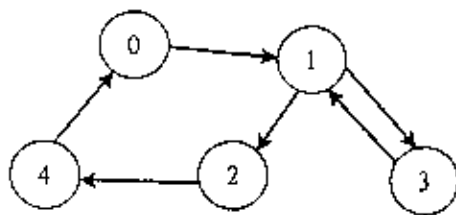


國立中央大學九十一學年度碩士班研究生入學試題卷

所別: 網路學習科技研究所 乙組 科目: 計算機概論 共 / 頁 第 / 頁

1. Briefly define each of the following terms. (10%)
compiler, interpreter, GUI, blue tooth, information hiding
2. Explain what are viruses, worms, Trojan horses, hackers and firewalls, respectively. (10%)
3. Convert each of the following numerals to base ten. (6%)
(1) $(ABCDE)_{16}$ (2) $(1001)_2$ (2's complement) (3) $(110,101)_2$
4. What is printed in the Java's code segment? (4%)

```
int x = 13, w = 6;  
w = ++x;  
w--;  
x = --w;  
x = w--;  
System.out.println("x = " + x);  
System.out.println("w = " + w);
```
5. Use the depth-first strategy and the breadth-first strategy to traverse the following graph, beginning with vertex 0. List the vertices in the order in which each traversal visits them. (10%)



6. Draw a graph to represent the memory hierarchy. Explain and compare these different types of memory. (10%)
7. Explain the following terms: a) call by name, b) call by value, c) call by reference (10%)
8. Evaluate $g(3, 2)$ for the recursive fun g : (10%)
$$\text{fun } g(n, a) =$$
$$\text{if } n=0 \text{ then } a \text{ else } g(n-1, n*a)$$
9. Write the postfix form of the following expressions: (10%)
a) $A+B+C$
b) $(A+B)*D+E/(F+A*D)+C$
10. Two of the more common data objects found in computer algorithms are stacks and queues. Illustrate two applications when such data structures are necessary. (10%)
11. What language is generated by the following grammars? In each case justify your answer. (S, V: Nonterminals, others: terminals) (10%)
a) $S \rightarrow +SS \mid -SS \mid a$
b) $V \rightarrow aVbV \mid bVaV \mid c$

參考用