NATIONAL OPEN UNIVERSITY OF NIGERIA
14/16 AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS
SCHOOL OF SCIENCE AND TECHNOLOGY
JUNE/JULY EXAMINATION

COURSE CODE: CIT341
COURSE TITLE: Data Structures (3 units)
TIME ALLOWED: 3hrs

QUESTIONS

1a. For an integer declared as month of the year, whose value is 4, use the Switch statement to write a program in Java to display the name of the month of the year (14 marks)

[Total = 14 marks]

2a. State the principle of optimality. (4 marks)

2b. State the function of the following primitive operation:

i. IndexOf)
ii. Set)
iii. Remove) (2 marks each, Total=10)
iv. Get)
v. Add)

[Total = 14 marks]

3a. List any two (2) reference types. (2 marks)

3b. Give a brief definition of these terms:

i. Parameters
ii. Fields
iii. Local variables (4 marks each; = 12 marks)

[Total = 14 marks]

4a. Name and describe two basic operations of a stack. (10 marks)

4b. Determine the linear expression of DIMY (6, 10) (4 marks)

[Total = 14 marks]

5a. State four main steps involved in Dynamic programming design. (10 marks)

5b. What is the transpose of the following digraph G = (V, E)? (4 marks)

[Total = 14 marks]

6a Explain the notion of 'Interface' within the context of Java programming language (6 marks)

6b. List the basic components of a 'Statement'. (2 marks)

6c. Distinguish between public and private modifiers. (6 marks)

[Total = 14 marks]

7a. State any 2 reasons for sub-allocations. (10 marks)

7b. What are the characteristics of a good hash function? (4 marks)

[Total = 14 marks]