2021

(November)

BCA/B.Sc.(IT) 3rd Semester

ITOL: 213

(Operating System: Assignment)

Total marks: 50

Q. 1: a. Write down the major objectives of operating system. 5

b. Write down some activities that the operating system performs. 5

c. Give the conceptual architecture of a computer system and explain how the operating system functions and interacts with system. 10

Or

c. Discuss how the concurrency control takes place in operating system. 5

d. Give a conceptual detail of context switching of processes. 5

e. Discuss the concept of multithreading in terms of user level threads and kernel level threads. 10

Q. 2: a. Give a detailed discussion on the various conditions for deadlocks to occur. Also give reference to suitable figures. 15

Or

b. Discuss the various strategies for handling deadlock. 15

Q. 3: a. Give a detailed discussion on process address space. 5

b. Explain any three page replacement algorithms. 10

Or

c. What is operating system security? Explain 5

d. Give a detailed overview of interrupt handling. 10

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BCA 3rd Semester

Computer Organization and Architecture

ITOL-124/211

Total Marks -50

Assignment

I. Answer ***anytwo*** from the following questions: 15x2=30

Q 1.a) What is DMAC? List the functions of a DMAC. Explain the steps of transferring data through DMAC? 2+5+8=10

b) Differentiate between sequential access and direct access memory. 5

Q 2.a) What are the different functional units of a computer? Explain 10

b) Describe the instruction cycle. 5

Q3. What is a bus? What are the different types of bus? Explain the bus organization with the help of a diagram? 2+6+7=15

Q 4.a) What is cache memory? Describe the cache memory organization with the help of a diagram. 2+8=10

b) Convert the infix notation A * B + A * (B * D + C * E) into the reverse polish notation. 5

II Answer ***anytwo*** from the following questions: 10x2=20

Q1.What is cache replacement? Explain in details the three cache replacement algorithm. 2+8=10

Q 2. Explain the different techniques of priority interrupt. 10

Q3. What are the two main operations of a stack. Explain the memory stack with the help of a diagram. 4+6=10

Q4. What is mapping? Explain the direct mapped cache mapping with the help of a diagram. 2+8=10

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BCA/B.SC(IT) 3rd Semester

Data Structure Using C

ITOL-124/211

Total Marks -50

Assignment

I. Answer ***anytwo*** from the following questions: 15 x 2 =30

Q1. a) Explain the theory behind Binary Search and also write a program for implementing it. 2+10 =12

b) Explain the difference between linear and non-linear data structure. 3

Q2. Write algorithms for traversing a circular linked list, insertion of node in the beginning and deletion of a node at the end. 5+ 5 +5 =15

Q3. a) Write a program to implement a stack as a singly link list. 10

b) List application of queues in Computer Science. 5

Q4.a) What is hashing? Explain the Linear Probing with the help of an example. 2 + 8 =10

b) Explain the sequential file organization. 5

II. Answer ***anytwo*** from the following questions: 10 x 2 = 20

1) Write a program to sort an array using quicksort. 10

2) What is a binary tree? Explain all the three techniques of binary tree traversal with a suitable example. 2 + 8 =10

3) What is overflow and underflow in a singly linked list? Differentiate between Linked list and an array. 5+5= 10

4) Write a program to illustrate the traversal of a matrix and find the sum of it's elements. 10

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BCA/B.Sc-IT 3rd Semester
(Assignment)

Paper: ITOL-214(System Analysis And Design)

Total Marks: 50

Answer any five from the following questions.

a) What is a system? Explain the characteristics of a system. 3+7=10

(b) What is Flow Chart? Explain with an example. 3+7=10

(c) What is DFD (Data Flow Diagram)? Explain the different types of DFD. 3+7=10

(d) What is software testing? Differentiate between white box testing and black box testing. 3+7=10

(e) What is file organization? Explain the two prime types of file organizations. 3+7=10

(f) What are the advantages of questionnaires? Explain with the help of examples. 3+7=10

(g) What is tangible cost? Explain the principles of cost-benefit analysis with the help of examples. 3+7=10

(h) What is SDLC (System Development Life Cycle)? Explain the phases of SDLC. 3+7=10