IV—Sem/CSE/IT/2019(S)(New)

OPERATING SYSTEM AND SYSTEM PROGRAMMING

(Code : CST-402)

Full Marks : 80 *Time* : 3 hours

Answer any **five** questions including **Q.Nos.1 & 2**

Figures in the right-hand margin indicate marks

1. Answer *all* the questions in briefly : 2 × 10

(*a*) Define process.

(*b*) What is semaphore ?

(*c*) Define page.

(*d*) Write the function of interpreter.

(*e*) What is context switching.

(*f*) Name two operating system.

(*g*) What is spooling ?

(*h*) Write the difference between Appl. software and System software.

(*i*) Give one example of Deadlock situation.

(*j*) Write two file access method.

2. Answer any *five* questions : 6 × 5

(*a*) Identify the functions of operating system and explain each.

(*b*) What is a process ? Draw the process state diagram to explain each state.

(*c*) Define swapping. Explain the principle of swapping by suitable diagram.

(*d*) What do you mean by device management ? Explain the techniques of device management.

(*e*) State and explain Banker's Algorithm.

(*f*) What is an Assembler ? Write the function.

(*g*) What is a file ? Explain file organisation.

3. What is the function of compiler ? Write the seven phases of compiler. 10

4. How deadlock occurs ? How it is detected recovered and prevented ? 10

5. Define device allocation techniques. Explain function and working of I/O scheduler. 10

IV/SEM/CSE/2018(W)/NEW

OPERATING SYS. AND SYS. PROGRAMMING

(CST – 402)

Full Marks : 70

Time : 3 hours

Answer any five questions

The figures in the right-hand margin indicate marks

1. (*a*) Define operating system. 2

   (*b*) State and explain functions of operating system. 5

   (*c*) What is a process ? Explain the different states of the process by using a suitable diagram. 7

2. (*a*) Define PCB. 2

   (*b*) Explain structure of operating system. 5

   (*c*) What is a scheduler ? Explain job scheduling. 7

3. (*a*) What is semaphore ? 2

(*b*) Define swapping. Explain memory management by using swapping with a suitable diagram. 5

(*c*) State and explain virtual memory using segmentation technique of memory management. 7

4. (*a*) What do you mean by interacting process ? 2

(*b*) What is file ? Explain directory and file structure. 5

(*c*) Define page. Why page fault occurs ? Explain demand paging tech. of memory allocation. 7

5. (*a*) Define spooling. 2

(*b*) State device management and explain types of allocating devices. 5

(*c*) Write the function of I/O scheduler. 7

6. (*a*) Define deadlock. 2

(*b*) Write the deadlock characteristics with the conditions for occurrence of deadlock. 5

(*c*) Write the file access techniques how files are protected in secondary storage management. 7

7. (*a*) Define compiler. 2

(*b*) Explain the function of assembler. 5

(*c*) What is the function of loader ? Explain types of loader. 7

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4TH SEM. / CSE/IT / 2022(S)

Th-1 Operating System

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No 1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. Define Process Synchronization.
   b. What is Demand Paging?
   c. What is the significance of using semaphore?
   d. What is Page Fault?
   e. Write the difference between program & process.
   f. What is Fragmentation?
   g. What are the objectives of operating system?
   h. What is Belady's anomaly?
   i. What do you mean by job scheduling?
   j. What is context switching?

2. Answer **Any Six** Questions 6 x 5
   a. What is Deadlock? Explain the necessary conditions for deadlock?
   b. What is Round Robin Scheduling algorithm? Explain with example.
   c. Explain different File allocation methods briefly.
   d. Compare the FCFS and SJF scheduling algorithm with respect to following.
      1.Turn Around Time
      2.Waiting Time
      Explain with suitable example.
   e. Explain Banker's algorithm for deadlock prevention.
   f. Define the following.
      1.Swapping
      2.Virtual Memory
   g. Write short note on paging.

3. What are the functions of a Compiler? Explain briefly the seven phases of compiler. 10

4. What are the different page replacement algorithms available in operating system? Explain with example. 10

5. Explain different memory allocation techniques. 10

6. Explain different types of Scheduler with suitable diagram. 10

7. i) Explain SPOOLING with diagram. 10
   ii) Explain demand paging.