OPERATING SYSTEM AND SYSTEM PROGRAMMING

(Code—CST-402)

Full Marks : 70

Time : 3 hours

Answer any five questions

Figures in the right-hand margin indicate marks

1. (a) Differentiate Application program and System program.   2

   (b) What is the function of loader ? Name and explain in brief types of loader.   5

   (c) State and explain seven phases of Compiler.   7

2. (a) Name two Operating System.   2

   (b) What is the function of Assembler ? Explain.   5

   (c) What is a file ? State file organisation and explain file access techniques.   7

(*Turn Over*)

3. (a) What is SPOOLING ? 2

(b) Define device management. Explain the function of I/O scheduler and I/O device handler. 5

(c) State the condition when deadlock occurs ? Explain how it is detected, recovered and prevented. 7

4. (a) What is a page fault ? 2

(b) State and explain Banker's Algorithm. 5

(c) What is segmentation ? Explain memory mention with segmentation. 7

5. (a) What is interacting processes ? 2

(b) State and explain Demand paging concepts. 5

(c) Write the types of Scheduling. State and explain job scheduling by taking suitable example. 7

6. (a) Define Kernel. 2

(b) What is PCB ? Explain different fields stored in PCB. 5

(c) Define process and process state. Draw a suitable diagram to explain different state of a process. 7

7. (a) Define semaphore. 2

(b) What do you mean by swapping ? Explain swapping by using a suitable diagram. 5

(c) State and explain structure of operating system. 7

8. Write short notes (any *four*) : $3\frac{1}{2} \times 4$

(i) Functions of operating system

(ii) Process synchronization

(iii) Techniques of device management

(iv) Secondary storage management

(v) Interpreter.

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