162 : 1ST HALF-13 (p)-JP

Con. 7048–13.

GS–8796

(3 Hours)

[Total Marks : 100

N.B. (1) Question No. 1 is **compulsory**.

(2) Attempt any **four** questions from the **remaining** questions.

(3) Assume **suitable** data whenever **necessary**.

1. (a) What is disk scheduling ? Explain various disk scheduling algorithms.   **10**

   (b) Explain various system calls with appropriate syntaxes.   **10**

2. (a) Explain necessary and sufficient conditions for deadlock, also explain how a resource   **10** allocation graph determines a deadlock.

   (b) What is Kernel ? Describe briefly the approaches of designing Kernel.   **10**

3. (a) Draw and explain architecture of RTOs.   **10**

   (b) Explain programmed I/o and DMA.   **10**

4. (a) What is semaphore ? Explain different types of semaphores.   **10**

   (b) Write a short note on File Access Methods.   **10**

5. (a) What is mutual exclusion ? Explain Peterson's algorithm for mutual exclusion.   **10**

   (b) What are the characteristics of real time systems ?   **10**

6. (a) What are preemptive and non-preemptive algorithms ? Explain any two with the help   **10** of example.

   (b) Write a short note on buffering techniques.   **10**

7. Write short notes on :—   **20**

   (a) User threads and Kernel threads

   (b) Race conditions

   (c) Demand paging

   (d) Monitor.