(20518) Roll No. .....

BCA-IV Sem.

18017

B. C. A. Examination, May 2018

Operating System

(BCA-402)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. 3×5=15

1. What is an operating system ? Discuss the various services of the OS.

2. Difference between time sharing system and real time system.

3. Difference between physical address and logical address.

4. Explain the demand paging and cache memory.

5. Explain the various attributes of a file.

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. 7½×2=15

6. Describe the critical section problem with suitable example.

7. Write the five UNIX and DOS commands with cross reference and function.

8. Explain, how memory can dynamically allocated using first fit, best fit and worst fit strategies.

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. 15×3=45

9. (a) What is page frame and page fault ?

(b) Solve :

7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1 using FIFO and LRU algorithm and calculate the page fault, page from = 3.

10. (a) Explain the performance criteria for scheduling algorithms.

(b) Consider the following process :

Process	Arrival Time	Burst Time (ms)
P_1	0	8
P_2	1	4
P_3	2	9
P_4	3	5

Calculate the average Wt. time and TAT by SJF preemptive and SJF non-preemptive scheduling.

11. Define the following :

(i) Fragmentation

(ii) Paging

(iii) Process state

(iv) Segmentation

(v) Memory management system.

12. What is deadlock ? Explain four necessary conditions for deadlock to occur with suitable example. Describe the different methods for prevention and avoidance of deadlocks.

13. Explain the linked allocation method for file. List the merits and drawbacks of this method. How does an indexed allocation solve the problems of linked allocation scheme ?