

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

Roll No

IT-504 (GS)**B.E. V Semester**

Examination, December 2017

Grading System (GS)**System Programming and Operating System***Time : Three Hours**Maximum Marks : 70*

- Note:** i) Attempt any five questions
ii) All questions carry equal marks.

1. Explain the following term : 14
i) Compiler ii) Macros
iii) Linkers iv) Assemblers
2. a) What are the various services that an operating system provides to the user? Discuss the basic design issues for an operating system. 7
b) Explain the difference among short term, median term and long term scheduling with the help of process state transition diagram. 7
3. For the following example calculate average turnaround time and average waiting time for the following algorithms. 14
i) FCFS
ii) Preemptive SJF

Process	Arrival time	Burst Time
P ₁	0	8
P ₂	1	4
P ₃	2	9
P ₄	3	5

IT-504 (GS)

138

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[2]

4. a) Explain Banker's Algorithm for deadlock avoidance with example? 7
b) Explain Best Fit, First Fit and worst Fit allocation? Write advantages of contiguous memory allocation. 7
5. a) On a simple paging system with 2^{24} bytes of physical memory 256 pages of logical address space and a page size of 2^{10} bytes. How many bytes are in a page frame? 7
b) Discuss the similarities and difference between paging and segmentation. Write advantages and disadvantages of these techniques. 7
6. How many page faults will occur with a references string 0, 1, 7, 2, 3, 7, 1, 0, 3? There are four frames which are initially empty. 14
i) LRU
ii) FIFO
iii) Optimal
7. a) Explain File Concepts. List the objectives of File Management System. 7
b) Explain any two disk scheduling methods with taking a suitable example. 7
8. Write a short notes (any two) : $2 \times 7 = 14$
a) Virtual Memory
b) Access Methods
c) Semaphores

139

IT-504 (GS)