

RA15

BATCH B SET B

SRM UNIVERSITY
DEPARTMENT OF INFORMATION TECHNOLOGY
15IT314J - PRINCIPLES OF OPERATING SYSTEMS
CYCLE TEST - II

Date : 23/10/2017

PART B

Answer Any five Questions

(5x4 = 20 marks)

- 21. How to prevent a deadlock ?
- 22. Explain the necessary and sufficient conditions for the deadlock to occur
- 23. What is dynamic partition memory management.
- 24. Explain the segmentation concept with a neat sketch.
- 25. What is copy-on write with respect to virtual memory.
- 26. What is the role of inverted page table in the paged memory management.
- 27. Write short notes on : Memory mapped -I/O

PART C

Answer all the Questions :

(5*12:60 marks)

- 28. a. (i). Write the safe state algorithm and resource request algorithm for deadlock avoidance. (8) (ii) Check the request from P2 : < 1 3 1 0 > with respect to the resource types <A B C D > could be granted or not. If the request is granted, give the safe sequence

(4)

Initial status - Available [A B C D]=[10 5 4 4] , Max and Allocation vectors are given below:

process no	Allocation				Max			
	a	B	c	d	a	b	c	d
1	3	2	1	0	5	5	1	0
2	2	1	0	0	4	2	0	1
3	2	0	1	1	4	3	2	2
4	1	0	0	1	2	0	1	1
5	0	1	0	1	0	1	1	2

Or

28.b. write short notes on : (i) Deadlock wait for graph (4)

(ii) Deadlock detection methods : (8)

29.a. Explain the internal fragmentation with respect to static partition memory management and External fragmentation with respect to variable partition memory management .

Or

29.b. Explain the page table maintenance with respect to cache memory and main – memory, Also discuss the effective access time.

30.a. Write short notes on : (i) Dynamic memory management and Garbage collection

(ii) Virtualization concept – Hypervisor, guest OS, Virtual machines.

Or

30b.Explain the segmented memory management and the hardware support. (12)

31.a. Write short notes on (1) Storage hierarchy (2) Emulator (3) Virtualization (4) locality of reference

Or

31.a. Discuss in detail on Demand paged memory management – (12).

32.a Explain the various scheduling : (12)

SCAN (r/w –towards cylinder 199), C-SCAN and LOOK scheduling:

Given the following queue -- 95, 180, 34, 119, 11, 123, 62, 64 with the Read-write head initially at the track 50 and the tail track being at 199 (Last track).

Or

32.b. Write short notes on (1) memory –mapped –I/O

(2) free space management methods. (any 2)

(3) Disk allocation methods (any 2).
