

University of Sargodha

M. Sc. 2nd Term Exam 2016.

Subject: I. T

Paper: Operating Systems (CMP: 3611)

Time Allowed: 2:30 Hour

Maximum Marks: 80

Objective Part

(Compulsory)

Q1. Write short answers of the following in 2-3 lines.

(2*16)

- ✓ 1. What is the difference between Kernel level threads and User level threads?
- ✓ 2. What is System Call?
- ✓ 3. Which of the following scheduling algorithms can lead to starvation? FIFO, Shortest Job, First, Priority, Round Robin.
4. What can be the capacity of queue for Message Passing Intercommunication?
5. Why page table is needed to be paged?
- ✓ 6. What is difference between Physical and Logical address?
- ✓ 7. What is meant by Pre-emptive Scheduling?
- ✓ 8. What is Context Switching?
- ✓ 9. What is the purpose of PCB?
10. What is the meant by Pure Demand Paging?
- ✓ 11. With what type of Fragmentation does Paging and Segmentation suffers from?
12. When cycle is both necessary and sufficient to detect deadlock?
- ✓ 13. What is Critical Section?
- ✓ 14. Differentiate between Soft affinity and Hard affinity?
15. Differentiate between Concurrency and Parallelism?
- ✓ 16. When and for what purpose Banker's algorithm is used?

Subjective Part (12*4=48)

Note: Attempt any four questions. All questions carry equal marks.

Q2: Compute average turn-around time and average waiting time using SRF and Round Robin (time slice = 4 units).

[6+6]

Process:	P0	P1	P2	P3	P4	P5
Arrival Time:	1	2	3	5	6	7
CPU Time:	7	5	4	1	4	2

- Q3. a) Write down solution of producer consumer problem using Semaphores.**
b) Write down solution of reader/writer problem with reader having priority.

Q4. Write down Banker's algorithm and Safety algorithm.

- Q5. a) Explain Access Methods in file? [9]**
b) What is RAID? What are its advantages [3]

- Q6. a) Draw the diagram of paging hardware with TLB. [6]**
b) What are the advantages and disadvantages of large page size. [4]
c) Why threads are called light weight processes? [2]

Q7. Find out page faults using Optimal and FIFO algorithm for following string. [6+6]
1, 3, 4, 2, 4, 5, 6, 4, 2, 3, 1, 7, 8

Consider only three free frames are available.