University of Sargodha

B.S. 4ᵗʰ Term Examination 2017

Subject: Software Engineer **Paper: Operating System (COMP-3621)**

Time Allowed: 2.30 Hours

Maximum Marks: 60

Note: Objective part is compulsory. Attempt any Three questions from subjective part.

Objective Part
(Compulsory)

Q. No.1. Write short answers of the following in 2-3 lines on your answer sheet.　　　　(2*12)

- i. What are the main purposes of an operating system?
- ii. What is the purpose of system Calls?
- iii. What is PCB?
- iv. What is multithreading?
- v. What is critical section?
- vi. What is meant by the term dispatch latency?
- vii. Write four necessary conditions for a deadlock to exist.
- viii. Name two differences between logical and physical addresses
- ix. What is virtual memory?
- x. What is the cause of thrashing?
- xi. What is a garbage collection?
- xii. What is a disk controller?

Subjective Part　　　(3*12=36)

Q2. Explain different models of multithreading in detail.

Q3. What is the difference between paged and segmented memory management? Explain the difference by giving suitable example of each.

Q4. What is Deadlock? Explain in detail how deadlock can be prevented?

Q5. Define File? Explain Access Methods in files.

Q6. Consider the following set of processes:

Process	Burst-Time	Priority
P1	15	4
P2	3	8
P3	7	5
P4	5	2
P5	1	5
P6	2	5

Processes are assumed to arrive in the order P1, P2, P3, P4, P5, and P6 all at time 0. Use FCFS, SJF, Round Robin (quantum2), and Priority (low numbers have high priority). For each of the algorithms

- i. Draw a Gantt chart
- ii. Obtain the average waiting time
- iii. Obtain the average turnaround time

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