

**University of Sargodha**

**BS 4<sup>th</sup> Term Examination 2023**

**Subject: Information Technology**

**Paper: Operating Systems (CMPC-204)**

**Time Allowed: 02:30 hours**

**Maximum Marks: 40**

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

**Objective Part (Compulsory)**

- Q.1.** Write short answers of the following in 2-3 lines each on your answer sheet. (2\*8)
- What does a mobile operating system (OS) do?
  - Describe the objective of multiprogramming.
  - How are threads represented in an operating system?
  - What is the difference between micro kernel and macro kernel?
  - What is the use of paging in operating system?
  - How many types of fragmentation occur in operating system?
  - What is spooling?
  - When does the OS take over the boot process?

**Subjective Part (3\*8)**

- Q.2.** Write down different services that are provided by an operating system and describe different states of a process.
- Q.3.** Explain the mechanism of context switching and perform comparative analysis among process schedulers.
- Q.4.** Define non-preemptive algorithms with suitable example.
- Q.5.** Explain device controllers and draw the structure of a bus in an operating system.
- Q.6.** What is deadlock? Explain. Which are the necessary conditions to achieve a deadlock?

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