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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **CO251U - Operating Systems and Systems Programming**

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Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

- 1) Solve any two sub-questions.
 - a) Explain two-pass assembler. [6]
 - b) Define system programming & system software. [6]
 - c) What is an operating system? Differentiate between Single-tasking and multi-tasking. [6]
- 2) Solve any two sub-questions.
 - a) What is multi-threading? Explain it with suitable example. [6]
 - b) Why do you need System Calls in Operating System? [6]
 - c) Explain any four components of Operating System. [6]
- 3) Solve any two sub-questions.
 - a) What is a Process? Explain different state of process. [6]
 - b) What is Inter Process Communication? [6]
 - c) What is Semaphore? Give some advantages and disadvantages of Semaphore. [6]
- 4) a) What is paging? Describe it in detail with suitable diagram. [6]
 - b) What is dining philosopher problem? [6]
- 5) a) When swapping is used in memory management? Explain in detail. [6]
 - b) Write short notes on the following disk scheduling algorithm. [6]
 - i) SSTF
 - ii) SCAN
 - iii) C-SCAN

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