

# **System Programming and Operating System (UGCS-204)**

**End Term Examination - Jan 2025**

## **Section A (1 mark each, compulsory)**

- i) What are the back-end phases of a compiler?
- ii) Compare the linkers and loader.
- iii) Provide the process state transition diagram.
- iv) Why do we maintain Thread Control Block (TCB)?
- v) Write the steps in Deadlock Prevention method.
- vi) Write the steps in Deadlock Recovery.
- vii) What are the advantages and disadvantages of Fixed and Variable partition of memory?
- viii) What is the Locality of reference?
- ix) Compare intermediate code generation and code optimization phases of a compiler.
- x) List the various code optimization techniques.

## **Section B (5 marks each, attempt any four)**

- Q2. The services and functions provided by an operating system can be divided into two main categories. Briefly describe the two categories and discuss how they differ.
- Q3. What is Process Synchronization? Explain the Critical-Section Problem with example.
- Q4. An OS uses a simple policy to deal with deadlock situations. When it finds that a set of processes is deadlocked, it aborts all of them and restarts them immediately. What are the conditions under which the deadlock will not recur?
- Q5. Discuss the hardware functions required to support demand paging.