

Roll No. ....

Total No. of Questions : 09]

[Total No. of Pages : 02

**B.Tech. (Sem. - 4<sup>th</sup>)**  
**OPERATING SYSTEM**  
**SUBJECT CODE : CS - 202**  
**Paper ID : [A0458]**

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 60

**Instruction to Candidates:**

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

**Section - A**

**Q1)**

**(10 × 2 = 20)**

- a) What is virtual memory?
- b) Define preemptive and non preemptive scheduling.
- c) Define critical section.
- d) What is deadlock?
- e) What are the different objectives for the operating system to decide scheduling?
- f) Differentiate between a page and a frame.
- g) Differentiate between program and process.
- h) Differentiate between protection and security.
- i) What is a Process Control Block?
- j) What are semaphores?

**Section - B**

**(4 × 5 = 20)**

**Q2)** What is Operating System? Discuss various classification of operating system.

**Q3)** What do you mean by page-faults? When do page-faults occur? Describe the action taken by the O.S when page fault occurs.

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- Q4)** What is fragmentation? Explain the difference between internal fragmentation and external fragmentation.
- Q5)** What is CPU scheduling? What is its need? List various scheduling algorithms.
- Q6)** What are distributed and non distributed operating systems?

**Section - C**

**(2 × 10 = 20)**

- Q7)** What is deadlock? List and explain four necessary conditions for dead lock to occur? Explain different algorithms for prevention and avoidance of deadlocks.
- Q8)** Compare and contrast Public - key cryptography technique with Conventional cryptography technique.
- Q9)** (a) What is paging? Explain different paging techniques.  
(b) Explain the concept of segmentation taking suitable examples.

