

Total No. of Questions – [04]

Total No. of Printed Pages: 01

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*paper code: P119-132 (T1)*

**OCTOBER 2019 / INSEM (T1)**  
**F. Y. M. TECH. (COMPUTER ENGINEERING)**  
**(SEMESTER - I)**  
**COURSE NAME: OPERATING SYSTEM DESIGN**  
**COURSE CODE: CSPA11182**  
**(PATTERN 2018:R1)**

Time: [1 Hour]

[Max. Marks: 20]

**Instructions to candidates:**

- 1) Answer Q.1 OR Q.2, Q.3 OR Q.4
- 2) Figures to the right indicate full marks.
- 3) Use of scientific calculator is allowed
- 4) Use suitable data where ever required

Q.1) What are the advantages of virtualizing a hardware resources? [6]  
Why can't you change the control registers in user mode ? [4]

**OR**

Q.2) A window system manages three hardware resources: the display, the mouse and the keyboard. Discuss a window system as an operating system. What are the virtual resources? What things are multiplexed and how (space or time or both)? Are the resources transformed for easier use? [10]

Q.3) Relate the terms race condition, atomic action, critical section and mutual exclusion. [10]

**OR**

Q.4) Suppose we wanted to change the message size used in the simple operating system from 8 words to 1024 words. What changes in the code would be required? What would be the effect of this change on users of operating system? [10]

*P.N: 01*