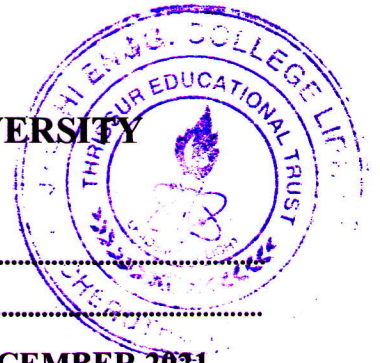


**APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY**  
**08 PALAKKAD CLUSTER**



Q. P. Code: CS0821111-I

(Pages: 2)

Name: .....

Reg. No: .....

**FIRST SEMESTER M.TECH. DEGREE EXAMINATION DECEMBER 2021**

Branch: Computer Science And Engineering

Specialization: Computer Science and Engineering

**08CS6011 Operating System Design**

(Common to CSE)

Time: 3 hours

Max. Marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

Q. No.	Module 1	Marks
1. a	Explain how interrupts are handled in Composite Risc Architecture	3
	<b>Answer b or c</b>	
b	Explain the System calls and System call Interface. Give an example of file and I/O system calls.	6
c	Explain process switching.	6
Q. No.	Module 2	Marks
2. a	What is interprocess communication?	3
	<b>Answer b or c</b>	
b	What is race condition? Consider two processes A and B trying to access a shared variable. How they can be given access to increment the variable thereby avoiding race condition? Justify your idea.	6
c	Describe deadlock in detail. What are the necessary conditions for dead lock?	6
Q. No.	Module 3	Marks
3. a	What is swapping? Give example.	3
	<b>Answer b or c</b>	

- b There are two object modules being combined in the load module, Module1 and Module2. Module1 is 110 bytes long and the module2 is 230 bytes long. Suppose there is a data cell named x in module 2 at address 150 and a reference to that address is included at address 85, Discuss With the help of diagram how this object module gets relocated into a load module . 6
- c Explain Global Page Replacement algorithms. 6

**Q. No.    Module 4    Marks**

4. a Distinguish between vertical retrace and horizontal retrace. 3

**Answer b or c**

- b Write notes on Disk devices and SCSI Interfaces. 6
- c Explain the different Disk Driver strategies. 6

**Q. No.    Module 5    Marks**

5. a Discuss the logical file structure. 4

**Answer b or c**

- b Explain briefly how we can implement a file system. 8
- c Describe how blocks are located on a disk. 8

**Q. No.    Module 6    Marks**

6. a What is cache invalidation? 4

**Answer b or c**

- b Describe in detail the queuing models of scheduling. 8
- c Explain how the protection information is represented in an OS. 8