C 83676 (Pages : 2) Name...............................

Reg. No............................

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2015

(CUCSS)

Computer Science

CSS 2C 02—OPERATING SYSTEM CONCEPTS

(2014 Admissions)

Time : Three Hours   Maximum : 36 Weightage

Part A

*Answer **all** questions.*
Each question carries a weightage of 1.

1. Give any two objectives of Operating Systems.

2. Define multi threading.

3. List the requirements for mutual exclusion.

4. Give the deadlock recovery strategy.

5. Differentiate between reusable resource and consumable resource.

6. What is the difference between internal and external fragmentation ?

7. What is meant by demand paging ?

8. What is meant by priority inversion ?

9. Define the term embedded system.

10. What are the three types of resource interface in TinyOS.

11. Explain the role of middle ware.

12. Give the advantages of remote procedure call.

(12 x 1 = 12 weightage)

Part B

*Answer any **six** questions.*
Each question carries a weightage of 2.

13. What is the difference between mode switch and process switch ?

14. Explain two categories of thread implementation.

15. Explain monitors.

16. Explain the conditions for Deadlock. How deadlock can be described in term of resource allocation graph ?

17. Explain thread scheduling.

Turn over

18.   What are the characteristics of a real time operating system ?

19.   Give an organization of embedded system with neat diagram and explain.

20.   Describe TinyOS.

21.   How does client/server differ from any other distributed processing solutions ?

(6 x 2 = 12 weightage)

Part C

Answer any **three** *questions.*
Each question carries a weightage of 4.

22 (a) Explain the reasons for process termination.

(b) Draw the UNIX process state transition diagram and explain.

23. Consider the following snapshot or a system :

	Allocation	Max	Available
	ABCD	ABCD	ABCD
PO	0012	0012	1520
P1	1000	1750	
P2	1354	2356	
P3	0632	0652	
P4	0014	0656	

Answer the following questions using the banker's algorithm :

(a)   What is the content of the matrix *Need* ?

(b)   Is the system in a safe state ?

(c)   If a request from process PI arrives for (0, 4, 2, 0), can the request be granted immediately ?

24.   Explain page replacement algorithms.

25.   Explain real time scheduling algorithms.

26.   Explain eCos scheduler.

27.   Explain distributed message passing in a single system.

(3 x 4 = 12 weightage)