(Please write your Exam Roll No.) *Exam Roll No. ……*

END TERM EXAMINATION

SECOND SEMESTER [MCA] MAY – JUNE 2017

Paper Code: MCA-106	*Subject: Operating Systems*
Time: 3 Hours	*Maximum Marks: 75*

Note: Attempt all questions as directed. Internal choice is indicated.

Q1 Answer the following: **(10x2.5=25)**

(a) What is distributed O. S.? **(2.5x10 = 25)**

(b) What is multi-processor scheduling?

(c) Mention the main features of Linux Operating System.

(d) Mention any two differences between shared devices and virtual devices.

(e) Name various file allocation methods.

(f) Compare program threats and system threats.

(g) How does many-t-one thread model differ from one-to-on model? Explain.

(h) What is Multilevel Feedback Queue Scheduling?

(i) What is segmentation and paging?

(j) What is the benefit of cryptography in O. S.?

UNIT-I

Q2 (a) Define job queue, ready queue and device queue that are used in the process scheduling. **(5)**

(b) Explain various criteria considered in CPU scheduling algorithms. Explain the following methods:

(i) Shortest Job First Scheduling

(ii) Round Robin Scheduling **(7.5)**

UNIT-II

Q3 (a) Define semaphores. Explain the role of wait() and signal() function used in semaphores. **(6)**

(b) Mention the characteristics of a deadlocked system. Explain various deadlock recovery techniques. **(6.5)**

OR

Q4 (a) Explain any two page replacement algorithms. Give an illustration. **(7.5)**

(b) Explain the process of logical to physical address translation in segmentation with paging system. Give the respective block diagram. **(5)**

UNIT-III

Q5 (a) Explain the following disk scheduling algorithms: **(6.5)**

(i) SSTF

(ii) C-SCAN

(b) Explain the following features of devices management: **(6)**

(i) Device allocation methods

(ii) Buffering and block multiplexing

UNIT-IV

Q6 Explain **any two** of the following:- **(6.25x2=12.5)**

(a) Two-Level Directory structure

(b) Intrusion Detection

(c) Free space management in Linux

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