(Printed Pages 2)

Roll No. .....

AC-358

B.C.A.-IVth Semester Examination, June 2015

(C-402)

OPERATING SYSTEM

Time : Three Hours]

[Maximum Marks : 75

[Minimum Marks : 30

Note : Attempt any **five** questions. **All** questions carry equal marks.

1. (a) Define File System in Operating System, with its type?

   (b) Explain the Secondary storage structure in operating system.

   (c) List and explain the main feature of operating system.

2. (a) Explain the difference between logical and physical address.

   (b) Define scheduling criteria.

   (c) What are the condition's that characterize deadlock?

3. Define the following :

   (i) Disk Structure

   (ii) Disk Reliability

   (iii) Disk Scheduling

   (iv) Disk Management

   (v) Swap Space Management

4. (a) Explain virtual device, list its advantage and disadvantages.

   (b) Explain various Scheduling Policies of Disk Scheduling.

   (c) Explain File allocation methods in brief.

P.T.O.

5 (a) What is deadlock? What are the approaches for handling deadlocks?

(b) Burst time for processes P_1, P_2, P_3, P_4 are as follow :

Process	P_1	P_2	P_3	P_4
Burst time	10	12	18	14

Make schedule of process by "FcFs" Scheduling Algorithm.

6. (a) Draw Resources allocation graph for

$P = \{P_1, P_2, P_3\}$; $R = \{R_1, R_2, R_3, R_4\}$

$E = \{P_1 \rightarrow R_1, R_1 \rightarrow P_2, P_2 \rightarrow R_3, R_3 \rightarrow P_3, R_2 \rightarrow P_1, R_2 \rightarrow P_2\}$

(b) What do you mean by Process? Explain process state, process control block and draw the diagram showing CPU switch from process to process?

7. (a) What are the five major activities of an OS with regard to file management?

(b) Define both algorithms :

(i) Safety Algorithm

(ii) Resource request algorithm

8. (a) What is memory management? Explain single and multiple partition allocation schemes for contiguous allocation approach.

(b) What is the virtual memory and its need? How it is mapped with physical memory?

(c) Define Page Replacement algorithm?