

S.Y.M.C.A. (Engineering)
OPERATING SYSTEMS
(2013 Course) (Semester - III) (410903)

*Time : 3 Hours]**[Max. Marks : 50**Instructions to the candidates:*

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Figures to the right side indicate full marks.*
- 3) *Use of Calculator is allowed.*
- 4) *Assume Suitable data if necessary.*

- Q1)** a) Define Operating System. Also state its characteristics? [4]
b) What is difference between Linker and Loader? [4]

OR

- Q2)** a) Write a note on Compiler? [4]
b) Compare Application Software and System Software? [4]

- Q3)** a) Explain various Operating System services? [4]
b) Explain Schedulers and its type? [4]

OR

- Q4)** a) Explain context switch? [4]
b) Consider the following set of processes with the length of CPU burst time and arrival time given in milliseconds. [4]

Process	Burst Time	Arrival Time
P1	5	1.5
P2	1	0
P3	2	2
P4	4	3

Illustrate the execution of these processes using FCFS CPU scheduling algorithms. Also Calculate Wait Time, Turn Around Time for each process. Also calculate Average Waiting Time and Average Turn Around Time for the above situation. Draw also Gantt Chart.

P.T.O.

- Q5)** a) Explain deadlock avoidance and prevention policies. [5]
b) Explain how to recover from Deadlock. [4]

OR

- Q6)** a) Explain IPC. [4]
b) Explain requirements of Mutual exclusion. [5]

- Q7)** a) Explain swapping with respect to memory management. [4]
b) Write a note on segmentation. [4]

OR

- Q8)** a) Write a note on Virtual memory management. [4]
b) Explain any Page replacement algorithm. [4]

- Q9)** a) Explain Disk structure. [4]
b) Write a note on File system structure. [4]

OR

- Q10)** a) Explain the methods for free space management in file. [4]
b) Write a note on File protection. [4]

- Q11)** a) List different components of Linux system. [4]
b) Explain any five different commands for file. [5]

OR

- Q12)** a) Explain the following commands: [6]
i) kill
ii) ps
iii) whois
b) Explain Process management system call. [3]

