Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 09

MCA (2015 & Onwards) (Sem.–4)

ADVANCED OPERATING SYSTEM

Subject Code : MCA-404

Paper ID : [74122]

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students have to attempt any ONE question from each SECTION.**
2. **SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.**

SECTION-A

1. Discuss the various challenges faced in the design and development of distributed operating systems.

2. Discuss the architecture of distributed operating system. How resource availability and fault tolerance is ensured in distributed operating systems?

SECTION-B

3. How real time and embedded systems are different from standard distributed operating systems? Discuss the basic structure and components of real time systems.

4. Discuss how scheduling of periodic, aperiodic and sporadic tasks in real time systems is performed.

SECTION-C

5. How resource monitoring and scheduling is performed in Grid Computing systems? Define performance metrics for scheduling algorithms.

6. Discuss the various differences between cluster and grid computing. Discuss the various components of Grid computing architecture.

SECTION-D

7. Discuss the building blocks and evolution of cloud computing system.

8. Discuss the common file systems in various mobile operating systems. Discuss the various features of IOS mobile operating system.

SECTION-E

9. Write briefly :

(a) Write names of **any two** real time operating system.

(b) What is mutual exclusion in distributed OS?

(c) Name any three differences between Android and windows based Mobile operating system.

(d) Name **any two** Grid operating systems.

(e) How Xen hypervisor is different from VMWare hypervisor?

(f) What is SAN?

(g) What is hardware-assisted virtualization?

(h) What is the difference between public and private cloud?

(i) Name **any two** schedulers of cluster computing system.

(j) How software virtualization is different from hardware virtualization?