

Total No. of Questions: 09

**MCA (2012 to 2014 Batch) (Sem. – 4)
ADVANCED OPERATING SYSTEMS**

M Code: 71418

Subject Code: MCA-404

Paper ID: [A2558]

Time: 3 Hrs.

Max. Marks: 100

INSTRUCTIONS TO CANDIDATES:

1. **SECTIONS-A, B, C & D** contains **TWO** questions each carrying **TWENTY** marks each and students has 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. Explain resource sharing, load balancing and inter-process communication in multi-processor operating systems.
2. Explain the architecture and organization of Distributed operating system.

SECTION B

3. Explain scheduling schemes in Real-Time operating systems.
4. Write short note on the following:
 - a) Hardware elements of Embedded systems
 - b) Interrupt driven RTOS

SECTION C

5. What do you mean by Clusters? What are the components of clusters? Discuss cluster applications.
6. What is a Grid? What is the difference between distributed computing and grid? Discuss the layered grid architecture.

SECTION D

7. Explain and differentiate between IaaS, PaaS and SaaS.
8. Discuss the design principles and structure of mobile operating systems. Also explain the features of Android operating system.

SECTION E

9.
 - a) What are the design challenges in multiprocessor operating systems?
 - b) Discuss the distributed file system in brief.
 - c) What is the difference between periodic and aperiodic tasks?
 - d) Briefly discuss the features of MOSIX operating system.
 - e) Compare grid computing and cluster computing.
 - f) What is Grid monitoring?
 - g) What is Virtualization?
 - h) What are the building blocks of Cloud computing?
 - i) Differentiate between SAN and NAS.
 - j) What are the essential requirements of a mobile operating system?