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

Total No. of Questions : 09

MCA (2012 & 2014 Batch)   (Sem.–4)
ADVANCED OPERATING SYSTEMS
Subject Code : MCA-404
Paper ID : [A2558]

Time : 3 Hrs.   **Max. Marks : 100**

INSTRUCTION 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.**
3. **Use of non-programmable scientific calculator is allowed.**

SECTION-A

1. Give a detailed description of Multi-processor and Distributed Operating System Architecture.

2. How is Inter-Process Communication achieved in Distributed Operating systems? Give suitable examples along with your answer.

SECTION-B

3. What are the different types of Kernel models in Real-time and Embedded Operating systems? What are the characteristics of each of these models?

4. What do you mean by Energy Aware CPU Scheduling concept? How is it different from traditional CPU scheduling?

SECTION-C

5. What are the main features of Grid Computing architecture? What are its applications? How is it better than other operating system architectures?

6. How is the Performance analysis done in Grid Computing environment? Also describe the Grid Monitoring and Scheduling processes.

SECTION-D

7. Compare and contrast the various Mobile Operating systems on the basis of their features and platforms.

8. What is Cloud computing? What are the various service models of Cloud computing?

SECTION-E

9. **Write short notes on :**

a) Mobile Operating Systems

b) Nanokernel model

c) Hardware & Software Virtualization in Cloud

d) Load Balancing

e) Features of Android

f) Cloud Building Blocks

g) Scheduling in Real time and Embedded OS

h) Cluster Computing

i) Distributed File System

j) Inter-Process Communication