Total No. of Questions: 09

MCA (2015 & Onwards)   (Sem. – 4)
ADVANCED OPERATING SYSTEM
M Code: 74122
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 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. Define distributed operating system. Explain its characteristics.   10

2. Write notes on the following:

   a) Significance of mutual exclusion.   5

   b) Design and development challenges for distributed operating system   5

SECTION B

3. What is real time and embedded operating system? Discuss the need of embedded operating system. Draw and explain its architecture.   10

4. Differentiate the following: -

   a) Micro and monolithic kernel based models   5

   b) Characteristics of periodic and aperiodic tasks   5

SECTION C

5. What are various grid monitoring and scheduling techniques? Explain in detail.   10

6. Write notes on the following: -

   a) Merits and demerits of cluster computing.   5

   b) Significance of grid computing.   5

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SECTION D

7. What is cloud computing? What are its features? Explain various building blocks of cloud computing. 10

8. What is need of mobile computing? Explain various features of Android and IOS. 10

SECTION E

9. a) What is need of load balancing in distributed operating system?

   b) List various features of multiprocessor operating system.

   c) What is distributed file system?

   d) List various characteristics of MOSIX.

   e) Define nano kernel.

   f) Define SAN.

   g) What is use of PaaS?

   h) Define software virtualization.

   i) Define IaaS.

   j) What are various characteristics of SaaS?