

**Quiz 7**  
**Operating Systems and Networks**  
**IIT Hyderabad**  
**Time: 30 minutes; Max. Marks: 24**

Note: Give a brief and correct answer. **Mention your name and roll number on the answer sheet.**  
**Answer the question after writing the FIRST 10 WORDS OF THE QUESTION ALONG WITH THE QUESTION NUMBER in the answer sheet.**

1. How “RAID Level 3” and “RAID Level 4” improve reliability and disk throughput ? What are the advantages of each option ? [6]
2. Explain the notion of “i-node”. Explain why a Read operation to a file results into several block level write operations on DISK. [6]
3. What file allocation method (Contiguous/Linked/Indexed) would you choose to maximize efficiency in terms of speed of access, use of storage space, and ease of updating (adding/deleting/modifying) when the data are
  - (i) updated infrequently and accessed frequently in random order ?
  - (ii) updated frequently and accessed in its entirety relatively frequently ?
  - (iii) updated frequently and accessed frequently in random order? [6]
4. Consider three sets of users, professor, TA and student. There exists a folder marks to which only professor can write into and student and TA can only read from. There exists another folder called course material which can be written to by professor and TA and students can only read from it. Use Access Control Matrix, determine a protection policy for this criteria. [6]