Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14CS3023** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INFORMATION STORAGE MANAGEMENT** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Based on the fundamental laws governing disk performance derive an expression for the average queue size and the time spent by a request in the queue.  Consider a disk I/O system in which an I/O request arrives at a rate of 100 I/Os per second. The service time, Rs is 8ms. Calculate the utilization of the I/O controller, total response time, average queue size and the total time spent by a request in a queue. If the controller power is doubled, the service time is halved. Show how the changed conditions will affect all the four calculated parameters. | CO2 | 20 |
| (OR) | | | | |
| 2. |  | Detail about RAID technology, RAID levels, different types of its implementations and their benefits. | CO2 | 20 |
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| 3. |  | Highlight the components of NAS and outline its two types of implementations. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Illustrate the working of the four key components of an intelligent storage system. | CO2 | 20 |
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| 5. |  | State the advantages of CAS and report how object storage and retrieval happens in CAS. | CO2 | 20 |
| (OR) | | | | |
| 6. | a. | Write about single point of failure and highlight the implementation of fault tolerance. | CO2 | 10 |
| b. | iSCSI is an IP-based protocol. Write a note on its components, connectivity, topologies and PDU. | CO2 | 10 |
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| 7. | a. | Detail the Backup and restore operations. | CO3 | 10 |
| b. | Virtualization is the technique of masking or abstracting physical resources. Demonstrate the configurations, challenges and types of storage virtualization. | CO1 | 10 |
| (OR) | | | | |
| 8. |  | Discuss in detail about storage array based local replication. | CO3 | 20 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | Detail the assets, threats, vulnerability of risk triad. | CO3 | 10 |
| b. | With a neat block diagram, discuss on securing IPSAN with CHAP authentication. | CO3 | 10 |