Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

II SEMESTER M.TECH. DEGREE MAKE UP EXAMINATION

APR/MAY 2017

SUBJECT: INFORMATION STORAGE AND MANAGEMENT [CSE 5281]

(OPEN ELECTIVE)

(24/06/2017)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitable assumed.

1A.	What is ILM? What are the key challenges of managing the information? What are the core elements essential for the basic functionality of a data center? Explain with appropriate diagram.	**4M**
1B.	Explain how Zoned bit recording improves the disk utilization.	**3M**
1C.	Write a note on logical component Logical Volume Manager of a host. Discuss its components.	**3M**
2A.	Explain and compare RAID 1/0 and RAID 0/1 with appropriate diagrams.	**4M**
2B.	What is meant by hot spare? What is its importance?	**3M**
2C.	With a block diagram of Symmetrix storage array explain the System Bay in it.	**3M**
3A.	Discuss with example a Command Queue algorithm based on optimization of seek time and rotational latency. Name and define the fibre channel ports in FC network.	**4M**
3B.	With the components of NAS explain the gateway NAS connectivity with relevant diagram.	**4M**
3C.	List the benefits of NAS.	**2M**
4A.	Briefing about the CAS terminologies, explain the steps involved in the data object storage process in a CAS system with appropriate diagram.	**4M**
4B.	Prepare a table containing three, four, five and six- 9's representation for availability metrics showing amount of downtime allowed for a service. Show your downtime calculations. Define Information Availability with the help of Accessibility and timeliness.	**4M**

4C.	Discuss on the features provided by the PowerPath.	**2M**
5A.	Explain read from target and write to target operations in pointer-based full-volume local replication activation with Copy on First Access (CoFA) mode.	**4M**
5B.	Prepare a list of Remote replication technologies. With appropriate diagram explain Disk-buffered remote replication mode.	**3M**
5C.	Define differential and incremental backup.	**3M**