VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SLOT – A1+TA1+A2+TA2

SCHOOL OF INFORMATION TECHNOLOGY AND ENGINEERING
Mid Term – SUMMER SEMESTER -II, 2023

Programme Name: MCA **Class Number(s):** VL2022230701038, VL2022230701039, VL2022230701040

Course Name Code: ITA6006 **Course Name: Storage Systems and Management**

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Answer all the questions (5 x 10=50) **Max Marks: 50**

Q.no.	Question
1.	The GRIT (GreenBook Research Industry Trends) is the leading survey of the insights industry worldwide. Over 30,000 market researchers, marketers, and executives—both clients & suppliers—use each edition to understand the trends impacting the industry and profession. They see GRIT as an invaluable resource to future-proof their organizations and careers, in ways both strategic and tactical. Assume that GRIT plan to establish its new branch in India. The Technical team had a brainstorming session in order to optimize its IT infrastructure. As a research intern, enlist the Critical Parameters involved in deploying a storage system for above scenario with the required key elements for developing the data centre for GRIT.
2.	Consider an application that requires 1TB of storage capacity and performs 5600 IOPS. Application I/O size is 6KB, as it is business critical application, response time must be within acceptable range. Specification of available disk drive: Drive capacity = 100 GB 15000 RPM 6ms average seek time 40 MB/sec transfer rate Calculate the number of disks required?
3.	Assume that 3i Technologies, IT Solutions company undertakes the financial transactions monitoring process in ATMs for a bank which is operated in all over the states in India. During the recent security audit meeting the CTO pointed out the transaction process aspects is facing service delays in customer's side. Deploy a suitable hybrid RAID solution for achieving the better solution to increase the transaction speed.
4.	Consider a disk I/O system in which an I/O request arrives at the rate of 60 IOPS. The disk service time is 5ms. **Compute the following:** Utilization of I/O controller, Total response time, Average queue size, Total time spent by a request in a queue, Compute the preceding parameter if the service time is halved.
5.	Microsoft Azure or Amazon Web Services (AWS) offers same type of cloud storage which is designed for storing and managing large amounts of unstructured data, such as text files, images, videos, audio files, backups, and other binary data – Expound on this concept and propose a detailed explanation.