1. DESCRIBE 5 OPTICAL STORAGE MEDIA USING THE FORMAT BELOW.

STORAGE MEDIA	DESCRIPTION/SIZE/USE	MANUFACTURER	COST IN PESOS	STRENGTH	WEAKNESSES
CD-ROM	CD-ROM stands for “Compact Disc Read Only Memory”, and CD-ROM comes in the “Random Access” category’s devices. These types of disc can capable to store almost 800 MB of digital data. These data can’t discard by mistaken.	Adaptec	100.00	it is easy to use, easy to move, cheap, and has a long life	It is easy to be damaged, non-modifiable, and keep limited data.
DVD-ROM	DVD-ROM stands for “Digital Versatile Disc – Read Only Memory”, and it also comes in the “Random Access” category’s devices. DVD-ROM discs can store data up to 4.7 GB, but Dual Layer DVD device’s storage capacity is double. These types of disc are used to store ultra quality video.	Aiwa	150.00	Very large storage capacity. Increasing availability. It is easily available in every store.	DVDs don’t add CD ROM drives. It is tough to vary data. There is no single standard on DVD.
Blu-ray	Blue Ray discs are totally replaced by DVDs, because these discs are capable to hold data up to 25-50 GB, as well as double layer Blue Rays discs can store double data. Due to high storage capacity, Blue Ray discs are used to store HD (High Definition) videos.	Blu-ray	500.00	Capacity, Backwards Compatibility, Manufacturer Support	Cost, Compatibility, Durability
HD DVD	HD DVD stands for “High Density DVD”, and these devices are capable to store data up to 15 GB (Dual Layer HD DVDS have storage capacity double). High-Density DVD discs are also used to hold HD Videos.	Toshiba	500.00	Manufacturing cost at low volumes	Video Capacity
CD-R & DVD- R	Full form of (CD-R & DVD-R) is “CD-Recordable and DVD Recordable”, and they are able to burn data on to them, but not easy to delete data. Users can add any type of data, but they can’t discard added data or re-use fully disc.	Sony	300.00	Affordable, recyclable, data stability	Trouble while recycling, some PC are not able to read.

2. DESCRIBE FOUR SOLID STATE STORAGE MEDIA USING THE FORMAT BELOW

STORAGE MEDIA	DESCRIPTION/SIZE/USE	MANUFACTURER	COST IN PESOS	STRENGTH	WEAKNESSES
Flash Memory	Flash memory is a type of Electronically-Erasable Programmable Read-Only Memory (EEPROM). Flash memory is non-volatile (like ROM) but the data stored in it can also be erased or changed (like RAM).	Samsung	200 pesos/GB	Speed, Drives, Durability	Cost, Effectiveness, Lifetime
USB Memory Sticks	Each of these small devices has some flash memory connected to a USB interface. Plug it into your computer and it appears as a drive. You can then add files, erase files, etc. You can use it to move any type of file between computers.	SanDisk	350.00	Reliability, Efficiency, Portability	Corruption, Security, Lifespan
Memory Cards	Many of our digital devices (cameras, mobile phones, MP3 players, etc.) require compact, non-volatile data storage. Flash memory cards provide this and come in a variety of shapes and sizes.	SanDisk	300.00	Physical Size, Speed, Efficient	Durability, Security, Cost
Smart Cards	Many credit cards (e.g. 'chip-and-pin' cards), door entry cards, satellite TV cards, etc. have replaced the very limited storage of the magnetic strip (the dark strip on the back of older cards) with flash memory. This is more reliable and has a much larger storage capacity.	Samsung	600.00	More secured and confidential	Level of security

3. Discuss the RAID technology, purpose and popular application where you can use it.

- RAID is an acronym for "Redundant Array of Inexpensive Disks"
- When interpreted literally, it means storing information across an array of relatively low cost hard disk drives (HDDs). It is generally considered to be "Technology that combines numbers of such inexpensive HDDs into a single HDD.
- RAID is the use of multiple disks to manage HDD data using a range of different techniques. These are typically divided into 6 levels ; RAID 0, RAID 1, RAID 2, RAID 3, RAID 4, RAID 5. They all differ in terms of data deployment and the type of redundancy offered.

4. What is tertiary, offline and robotic storage? Provide example of each

- A tertiary storage system typically refers to a data storage system that uses drives that accept removable media, a storage rack for the removable media, and a robot arm to transfer media between the storage rack and the drives.
- Offline storage refers to any storage medium that must be physically inserted into a system every time a users wants to access or edit data.
- A robotic storage system is a system for the storage of goods equipped with automatic management systems based on robotic solutions. It is a system for warehouse logistics in which robots and automation work in synergy to ensure faster and more efficient management of the entire handling process.

5. Describe the computer memory hierarchy.

- The memory hierarchy design in a computer system mainly includes different storage devices. Most of the computers were inbuilt with extra storage to run more powerfully beyond the main memory capacity. The following memory hierarchy diagram is a hierarchical pyramid for computer memory. The designing of the memory hierarchy is divided into two types such as primary (Internal) memory and secondary (External) memory.
- The memory in a computer can be divided into five hierarchies based on the speed as well as use. The processor can move from one level to another based on its requirements. The five hierarchies in the memory are registers, cache, main memory, magnetic discs, and magnetic tapes. The first three hierarchies are volatile memories which mean when there is no power, and then automatically they lose their stored data. Whereas the last two hierarchies are not volatile which means they store the data permanently.