SRINIVAS UNIVERSITY

QUESTION BANK WITH ANSWER

FOUNDATION OF INFORMATION TECHNOLOGY

UNIT 2

Multiple Choice Questions:

1. Secondary storage memory types

   A. Volatile memory **B. Non-volatile memory**

   C. Backup memory D. Impact memory

2. Process of reading data from the permanent store and writing it to the computer's main store iscalled

   A. Saving data **B. Loading data**

   B. Writing data D. Reading data

3. Hard discs, fixed head discs, floppy discs and optical discs all are types of

   A. Direct Access Storage B. Serial Access Storage

   C. Volatile Access Storage D. Non-Impact Access Storage

4. CD–ROM is a kind of?

   A. Optical disk B. Magneto-Optical disk

   C. Magnetic disk D. None of these

5. A process of preparing a floppy diskette for use is called_____

   A. Assembling **B.Formatting**

   C.Parsing D.Translating

6. Data going into the computer is called_____

   A.Algorithm B.Output

   C.Input D.Calculations

7. Transformation of Input into output is performed by_____

   A.Peripherals B.Memory

   C.The CPU D. The Input-Output unit

8. What is equipment used to capture information and commands?

   A. Output device B. Storage device

   C. Input device D. Telecommunication device

9. Which among the following is not an input device?

A.**Printer** B.Mouse

C. Scanner D.Keyboard

10. Which among the following is not a type of printer?

A. Rubber Wheel B.Inkjet

C. Dot Matrix D.Laser

11. What is the full form of a USB?

A. Unidirectional Serial Bus B. Universal Standard Bus

C. Unidirectional Standard Bus **D. Universal Serial Bus**

12. A displaying screen in which text is presented in one color and the background is of any other color is called

A. Monochrome screen B. High-resolution screen

C. Low resolution screen D. Medium resolution screen

13. Computer or system peripherals that receive data from the processing unit are called

A. Devices B.Receiver

C.Preprinted documents D. Analogue devices

14. To write program functions such as input four numbers and print their sum, program refinement first level includes

A. Input four numbers B. Calculthe ate sum

C.Print values D. Print variables

15. Secondary storage memory types

A. Volatile memory **B. Non-volatile memory**

C. Backup memory D. Impact memory

16. Which one is the mass storage device

A. RAID B.CPU

C.System bus D. Memory unit

17. A device that uses a small lever to control movement on the screen is classified

A. Joystick B. light stick

C. Digital stick D. transmission stick

18. Output/input devices enabling users to communicate with computer systems are called

A. Terminals B.Telecommunication

C.Data communication D. Communication

19. Name the optical input device

A. Mouse B.Printer

C.OCR D. Touchpad

20. Techniques used in 'character recognition includes

A. Optical character recognition B. magnetic ink character recognition

C. Optical mark reading **D. both an and**

21 A terminal that has its processor and without linking to central processing can runsome programs is called

A. **Intelligent terminal** B. Digital terminal

B. Trained terminal D. Spaced terminal

22 A device used to print graphical output such as graphs and designs by a computer on paperis called

a. Printer **B.Plotter**

C. Output processing unit D. Input processing unit

23 Device that is used to detect bar codes and to indicate points on thescreen is

A.Digital pen B. Electrical pen

C.Light pen D. Hand pencil

24 A display terminal that has a keyboard to input and a monitor screen for output is called

A. **Visual display terminal** B. Logical display terminal

C. Facilitated terminal D. Displayed terminals

25 Type of printer in which characters or letters are formed without any mechanical impact is called

A. Page printers B. Line printers

C.Impact printer D. Nonimpact printer

LONG ANSWERS

1. **Give a brief outline** of the **Optical disk**

An optical disk is a flat, circular, plastic disk coated with material on which bits may be stored in the form of highly reflective areas and significantly less reflective areas. These disks are capable of storing enormously high amounts of data in a limited amount of space. The optical disk storage system consists of a rotating disk coated with a thin layer of metal (aluminum, gold, or silver) that acts as a reflective surface and a laser beam, which is used asa read/write head for recording data onto the disk. The optical disk comes in various sizes and capacities. A compact disk (CD) holding 600- 700 MB of information having a 12 cm diameter is the most popular means of optical storage. In a single-track optical disk, storage capacity is calculated by the multiple of several sectors and the number of bytes per sector. Since the storage capacity of an optical disk is huge, the cost per bit of storage is very low. Storage organization of optical disk and optical disk consists of a single long track in the form of a spiral shape. This track starts from the outer edge and spirals inward to the center of the disk. The spiral shape of the track makes the optical disk suitable for reading large blocks of sequential data onto it. The most common type of optical disk is the CD-ROM, and DVD-ROM, which stands for compact disk read-only memory and digital video disk, respectively.

1. **Explain the following :**
   a. **USB**
   b. **Pen drive**

UNIVERSAL SERIAL BUS

Universal serial bus (USB), is a set of connectivity specifications that establishes communication between personal computers and devices such as a mouse, keyboard, pen drive, external hard disk drives, etc. Almost every computer or laptop is equipped with one or more USB ports. All USB devices come with a USB connector that is plugged into the USB port on the computer.

PenDrive

A pen/flash drive is a removable storage device that is used to transfer audio, video, and data files from one computer to another. A pen drive consists of a small printed circuit board, which is fitted inside a plastic metal or rubber casing to protect it. The USB connector which is present at one end of the pen drive is protected by either a removable cap or pulling it back in the casing.

The pen drive is a high-storage capacity (ranging from 1GB to 32GB) device and is physically small enough to fit into a pocket.

2. **Differentiate LCD vs CRT**

Size: LCD is lightweight and compact, which saves desktop space as compared to a CRT.

Resolution: LCD is designed to work in a single resolution while CRT is designed for many resolutions.

Pixel Density: The pixel density of LCD is generally not as tight as the dot pitch in CRT but formost applications, the density is acceptable.

Brightness: The illuminated phosphors of a CRT are not nearly as bright as what the LCDcan produce with its fluorescent backlight.

Power Consumption: LCD consumes significantly less power than CRT and has a low emission risk. An LCD consumes approximately half of the power of a typical CRT.

Flicker: With CRT monitors, the goal is to get a faster refresh rate of at least 85 Hz, but LCD monitors are designed to run at a much slower refresh rate.

Pixel Response Time: The time taken by a pixel to change its state is called pixel response time. CRT has a fast pixel response time but LCD can be quite slow.

Viewing Angle: CRT can be viewed at almost any angle but LCD is best viewed “head-on”.

Viewing Area: The viewing area of a CRT is less than its advertised area. Most 19inch CRT monitors have 18 inches of viewable area. An LCD monitor is advertised as 17.4 inches, it isthe same.

Cost: Prices for LCD screens are more costly than CRT.

3. How would you explain any 2 optical devices

OPTICAL MARK RECOGNITION(OMR)

OMR is used to detect marks on paper. The marks are recognized by their darkness. OMR uses an optical mark reader to read the marks. The OMR reader scans the forms, detects the mark that is positioned correctly on the paper and is darker than the surrounding paper, and passes this information to the computer for processing by application software. For this, it uses a beam of light that is reflected on the paper with marks, to capture the presence and absence of marks. The OCR detects the presence of marks by measuring the reflected light. OMR is widely used to read answers to objectives-type tests, where the student marks an answer by darkening a particular circle using a pencil.

BAR CODE READERS

Barcodes are adjacent vertical lines of different widths that are machine-readable. Goods available at supermarkets, books, etc use barcodes for identification. Barcodes are read using reflective lightby barcode readers. This information is input to the computer which interprets the code using the spacing and thickness of bars. Hand-held barcode readers are generally used in departmental stores to read the labels, and in libraries to read labels on books. Fig. below shows a barcode printed on the back of a book.
Barcode readers are fast and accurate. They enable faster service to the customer and are also used to determine the items being sold, the number of each item sold, or to retrieve the price of items.

4. Write a note on Magnetic tape

The magnetic tape appears similar to the tape used in music cassettes. It is plastic tape with a magnetic coating. The data is stored in the form of tiny segments of the magnetized and de-magnetized portions on the surface of the material. A magnetized portion of the surface refers to the bit value 1' whereas a demagnetized portion refers to the bit value '0'. Magnetic tapes are available in different sizes.
Magnetic tapes are very durable and can be erased as well as reused. These tapes are cheap and

The reliable storage medium for organizing archives and taking backup. However, magnetic tapes are not suitable for data files that need to be revised or updated often because it sequentially stores data. Sequential access means that the user must advance or rewind the tape to the position where the requested data starts.
If the tape stretches too much, then it will render it unusable for data storage, and data loss may result. Disk data can be accessed directly, as opposed to data on tape, which can be accessed only bypassing all the data ahead of it. Thus, the primary role of the tape drive is limited to backing up or duplicating the data in the hard disk drive to protect the system against loss of data during power failures.
The magnetic tape is divided into vertical columns (frames) and horizontal rows (tracks). The data is stored in a string of columns or frames with one data per frame. Each frameisfurtherdividedintorowsortracks(7to9tracks).Abitcanbestoredineachtrack,withone byte per frame. On a magnetic tape, data is recorded in the form of blocks, where each block consists of a grouping of data (known as records) that are written or read continually.

5. Write a note on the Mass storage device

Redundant Array of Inexpensive Disks (RAID): The basic idea of RAID is to combine multiple hard disks into an array of disk drives to obtain high performance, large capacity, and reliability. The disk arrays can be made fault-tolerant by redundantly storing information in various ways. Five types of array architectures, RAID 1 through RAID 5, were originally defined; each provides disk fault-tolerance with different compromises in features and performance.

Automated Tape Library: An automated tape library comprises numerous set magnetic tapes along with their drives and controllers mounted in a single unit. The unit comprises one or more tape drives to perform read/write operations on the tapes in the tape library. The unit with the help of a robotic arm retrieves appropriate tape from the tape library, mounting it on the tape drives for processing and then to the library after the job has been finished.

CD-ROM Jukebox: A CD-ROM jukebox comprises numerous sets of CD-ROM disks along with their drives and controllers mounted in a single unit. The unit comprises one or more CD-ROM drives to perform read/write operations on the CD-ROM in the jukebox. In multiple CD-ROM drive environments; these CD-ROMs can be simultaneously read or written, thus resulting in a speedy rate of data transfer. Mass storage devices have relatively slow access time, generally in the order of seconds, instead of milliseconds.

6. Illustrate the methods for accessing data fromthe secondary storage devices

Sequential access means the computer system must search the storage device from the beginning until it finds the desired information. The most common sequential access storage device is a magnetic tape where data is stored and processed sequentially.

Suppose, a tape contains information regarding employees of an organization. Forex. Here, to look for employee number information, the computer will have to start with 1 and then go past 2, 3, and so on, until it finally comes to 100. This data access method is less expensive than other methods because it uses magnetic tape, which is cheaper than disks.
The disadvantage of the sequential organization is that searching for data is slow.

Direct access, also known as random access, means that the computer can go directly to the information that the user wants. The most common direct access storage is magnetic and optical disks. In this method, information is viewed as a numbered sequence of blocks. Thus, one can read block 12, then read block 78, and then block 2. There is no restriction on reading or writing in the direct access method. It is ideal for applications such as airline reservation systems or computer-based directory-assistance operations.

7. Illustrate the steps involved in process of accessing data in a Magnetic disk

The process of accessing data comprises three steps:

1. Seek: As soon as the disk unit receives the read/write command, the read/write heads are positioned on the specific track on the disk platter. The time taken in doing so is known as seek time. It is the average time required to move the heads from one track to some other desired track on the disk. Seek times of modern disks may range between 6-15millisecond.
2. Rotate: Once the heads are positioned on the desired track, the head of the specific platter is activated. The average rotational latencies range from 4.2 to 6.7ms.
3. Data Transfer: After waiting for the desired data location, the read/write head transfers the data to or from the disk to the primary memory. The rate at which the data is read from or written to the disk is known as the data transfer rate.

9. Briefly explain Impact printers

Impact printers work by physically striking a head or needle against an ink ribbon to make a mark on the paper. This includes dot matrix printers, daisy wheel printers, and drum printers.

Dot Matrix Printers
The dot matrix printer is the oldest printing technology and it prints one character at a time. Usually, dotmatrix printers can print any shape or character, which a user can specify. This allows the printer to print many special characters, and different sizes of print, and enables it to print graphics, such as charts and graphs. The speed of dot matrix printers is measured in characters per second (cps). Most dot matrix printers offer different speeds depending on the quality of print desired.

Daisy Wheel Printer The major drawback of the dot matrix printer is that the pattern of dots that make up each character is visible on the print produced by it, making it look unprofessional. If you need a printer that can produce professional letter-quality documents, you need a daisy-wheel printer. The daisy wheel printer is named so because the print head of this printer resembles a daisy flower, with printing arms that appear like the petals of the flower. They can have speeds up to 90 cps. These printers are also called smart printers

Drum printer The dot matrix and daisy wheel printers are characters or serial printers, i.e. they print one character at a time. A drum printer is a line printer, i.e.it can print a line in a single operation. Its printing speed varies from 300 lines to 2000 lines per minute with 96-160 characters on a 15-inch line; such printers are much faster than character printers.

10. Briefly explain nonimpact printers

Ink-Jet Printers The most common type of printer found in homes today is the ink-jet printer. Aninkjet printer is a printer that places extremely small droplets of ink onto paper to create an image. Being a non-impact printer, it does not touch the paper while creating an image. Instead, it uses a series of nozzles to spray drops of ink directly onto the paper. Inkjets were originally manufactured to print in monochrome (black and white)only.

However, the print head has now been expanded and the nozzles increased to accommodate cyan (C), magenta (M), yellow (Y), and black (K). This combination of colors is called CMYK. It allows for printing images with nearly the same quality as a photo development lab using certain types of coated paper.

Laser Printers A laser printer provides the highest quality text and images for personal computers today. It is a very fast printer, which operates on the same principle as that of a

photocopy machine. Most laser printers can print text and graphics with a very high-quality resolution. They are also known as page printers because they process and store the entire pagebefore they print it. They produce sharp, crisp images of both text and graphics, providing resolutions from 300 to 1200 dpi. They are quiet and fast, able to print 4-32 text-

only pages per minute for individual microcomputers and up to 200 pages per minute formainframes. Laser printers can print more than 20000 lines per minute.

11. Explain in detail any 2 pointing devices

Trackball A trackball is a pointing device that works like an upside-down mouse. You rest your thumb on the exposed ball and your fingers on the buttons. To move the pointer around the screen, you roll the ball with your thumb. Because you do not move the whole device, a trackball requires less space than a mouse. When space is limited, a trackball can be an advantage. Trackballs gained popularity with the advent of laptop computers, which typically are used on laps or small work surfaces' without room for a mouse.

The Trackpad (TouchPad) The trackpad (also called a touchpad) is a stationary pointing device that many people find less tiring to use than a mouse or trackball. The movement of a finger across a small touch surface is translated into pointer movement on the computer screen. The touch-sensitive surface may be only 1.5 or 2 inches square, so the finger never has to move far. The trackpad’s size also makes it suitable for a notebook computer. Some notebook models feature a built-in trackpad rather than a mouse or trackball. One drawback of track pads is that they must be kept clean and static-free. The buildup of dust and oils from the user's fingers affects a trackpad’s performance, making it less sensitive to the touch. An unwanted static charge can make a trackpad behave erratically.