Inter (Part-I) 2019

Computer Science	PAPER: I
Time: 2.10 Hours	(SUBJECTIVE TYPE)	Marks: 60

SECTION-I

2. Write short answers to any SIX (6) questions: (12)

(i) Enlist data gathering techniques.

Ans List of data gathering techniques is:
1. Written documents   2. Interviews
3. Questionnaires   4. Observations
5. Sampling

(ii) How daisy wheel printer works?

Ans Daisy wheel printer uses a mechanism in the shape of a series of petals arranged on a portal wheel, having a character at the end of each petal. A character comes into a print position by wheel rotation and an image is formed by the hammer strike on the desired character. It is slower than dot-matrix printer but better in quality.

(iii) Why user training is important in SDLC?

Ans Involving the users in the SDLC process from the beginning and ensuring their proper training is very much essential throughout the system design activity. A variety of methods/tools are used to do so *i.e.*, Instruction Manual, Videotapes/CDs, lectures, etc. The training may be conducted "In-house" or it may be "Contracted out".

(iv) Why we use workgroup computing?

Ans In a computer network, people can work together as a group even when they are thousands of miles away from each other. This concept of working together is called workgroup computing.

(v) In which situation gateway is used?

Ans A gateway is a collection of hardware and software resources that lets a node communicate with a computer

on another different network. A gateway, for example, could connect an attorney on a local area network to a legal service offered through a wide-area-network.

(vi) How ISDN is different from DSL?

Ans ISDN (Integrated Services Digital Network) is a set of international communication standards for software control of transmitting voice, video, and data simultaneously as digital signals over twisted-pair telephone lines. On the other hand, DSL (Digital Subscriber Line) provides high speed, digital data transmission from homes and businesses over existing telephones lines. The existing lines are analog and the transmission is digital, so modems are necessary with DSL technology.

(vii) What is the difference between direct and indirect input?

Ans Indirect input devices translate some action of the human body into data. Examples include a computer mouse, a rotary encoder or a joystick. On the other hand, direct input devices have no intermediary; the movement of the body equals the input to the machine. Examples are: touch screens, light pens, voice recognition system, etc.

(viii) List out four domains with their type of institutions.

Ans Domain	Type of Institution
.com	Business (Commercial)
.edu	Educational Institutes
.gov	Government Organizations
.org	Other Organizations (non-profitable)

(ix) Write two limitations of email.

Ans Following are the two limitations of email:

1. Some email systems can send or receive text files only.

2. You may not know about the person with whom you are communicating.

3. **Write short answers to any SIX (6) questions: (12)**

(i) **How data is represented in computer?**

Ans The data is represented in computer through its working with binary numbers. Binary means two digits. These are 0 and 1. An electrical pulse inside the computer represents each binary number. 1 is represented by a pulse of electrical inside the computer and 0 by an absence of a pulse. Each binary digit is called bit and it is the smallest element of data.

(ii) **Define EBCDIC code.**

Ans EBCDIC stands for Extended Binary Coded Decimal Interchange Code. It is 8-bit code. In this binary coding system, $256 = 2^8$, different characters can be represented inside the computer. It provides an efficient way to communicate data between hosts, which use EBCDIC coding scheme for data representation. For transmission, the data is represented as 8-bit EBCDIC characters.

(iii) **What is asynchronous transmission?**

Ans In asynchronous transmission, data is transmitted one byte at a 'time'. This type of transmission is most commonly used by microcomputers. The data is transmitted character-by-character as the user types it on a keyboard.

(iv) **Define E-Commerce.**

Ans Electronic Commerce (E-commerce) is to do business online. It includes buying, selling and exchanging of products, services and information online/via computer network. B2B, B2C, C2C and mobile commerce are such kinds of E-commerce.

(v) **Define Document Management System.**

Ans A document management system (DMS) is a system used to track, manage and store documents and reduce paper. Most are capable of keeping a record of the various versions created and modified by direct users.

(vi)   What is WYSIWYG?

Ans With WYSIWYG (What You See, Is What You Get), a document appears on the display screen exactly as it will look when printed.

(vii)   Describe the role of insert mode.

Ans In insertion mode, the newly entered text is placed at the current position of the cursor.

(viii)   State the advantages of Named Ranges.

Ans Advantages of Named Ranges are:

1.   A meaningful range name is much easier to remember than a range address.

2.   After you select a named cell or range, its name appears in the name box.

(ix)   Define function in MS-Excel.

Ans In MS-Excel, functions are built-in formulas used to perform complex operations. Such as adding the contents of a range or finding the absolute value of a cell's contents.

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4.   Write short answers to any SIX (6) questions: (12)

(i)   What is computer architecture?

Ans The design or construction that shows the organization and interconnection of virus computer components is called computer architecture. Components of computer architecture are CU, ALU, Main Memory, I/O unit and Bus Interconnection.

(ii)   What is the role of main memory?

Ans A computer executes a program in its main memory, which is very important component of the stored program computer. A computer cannot work without having some kinds of main memory in it.

(iii)   What is bus interconnection?

Ans Bus interconnection is used to connect different parts of the computer together. A computer consists of a CPU, Main Memory and I/O unit. For data to flow between

these components, we need some kinds of interconnections, which is another very important component of the overall computer architecture, that component is called bus interconnection.

(iv) What is interrupt?

Ans Interrupts are the signals, normally generated by I/O devices. In this scheme, the processor issues of the command to the I/O devices. When the devices get ready, these generate an interrupt signal for the processor. On sensing this signal, the processor suspends all other processing and performs the I/O operation.

(v) What is the role of registers in computer?

Ans A register may hold an instruction, a storage address, or any kind of data (such as a bit sequence or individual characters). Some instructions specify registers as part of the instruction.

(vi) Define security of data.

Ans Security of data refers to protective digital privacy measures that are applied to prevent unauthorized access to computers, databases and websites. Data security also protects data from corruption of software.

(vii) What is the use of biometrics for data security?

Ans You might use biometrics everyday to secure your identity data or communicate with a personal device, but there are plenty of other uses for biometrics. For example, it may use video surveillance to analyze a suspect's gait or voice.

(viii) What is meant by multi-tasking?

Ans The capability of an operating system to load multiple programs into memory at one time and to perform two or more processes concurrently, such as printing a document while editing another, is known as Multi-tasking.

(ix) What is primary partition?

Ans The partition that can be used to boot an operating system is known as primary partition.

SECTION-II

Note: Attempt any THREE (3) questions.

5. Define pointing devices. List down all pointing devices and discuss any two. (8)

Ans Pointing Devices:

Pointing devices control the position of the cursor or pointer on the screen.

List of all Pointing Devices:

1. Mouse
2. Trackball
3. Pointing Stick
4. Touch pad
5. Touch Screen
6. Light pen
7. Digitizing / Graphic tablet
8. Pen-based system

1. Mouse:

A mouse is an input device that looks a little bit like a mouse. It has a ball on its underside that is rolled on a flat surface or mouse-pad. The rolling movement causes a corresponding cursor movement on the screen. It enables us to reposition the cursor (or pointer) on the screen whenever we want. It also has buttons on its top which communicate certain commands to the computer while pressed. In particular, button is often used to click on an icon (icon represents a computer activity or command) to invoke the command.

2. Trackball:

The trackball is a moveable ball, on top of a stationary device, that is rotated with fingers or palm of the hand. Its popularity surged with the advent of laptop computers where travelling users found themselves without a flat surface to roll the traditional mouse. It looks like the mouse turned upside down and likewise, has additional buttons whose functions vary depending on the software.

6. Explain client / server, peer-to-peer and Hybrid network modal in detail. (3,3,2)

Ans For Answer see Paper 2014, Q.5.

7. Briefly describe different guided media. (8)

Ans Guided Media:

It refers to channels that allow the transmission of data through a physical media such as a twisted pair wire, coaxial cable, or fiber optic cable. These are also called bounded media.

1. Twisted Pair:

The telephone lines used to carry most of the voice and data communications consist of a pair of thin-diameter insulated copper wires (called twisted pairs). The wires are twisted around each other to minimize interference from other twisted pairs in the cable. Twisted pairs have fewer bandwidths than coaxial cable or optical fiber. They have been the standard communication channels for voice, data and information, but are now diminishing because of more reliable media such as coaxial cable, optical fiber, microwave, or satellite.

2. Coaxial Cable:

Coaxial cable can be used for telephone lines for transmission at a high frequency. Coaxial cable consists of a single core of solid copper. A coaxial cable can handle 80 times as many telephone transmissions as twisted pair media. Many computers in local area networks are linked by coaxial cables. Because of its sturdiness, coaxial cable is often used for telephone lines that must be carried under water. Because coaxial cables have very little distortion and are less prone to interference, they have low error rates. Coaxial cable contains from four to twenty-two coaxial units called tubes, Each coaxial tube consists of a 0.100-inch copper inner conductor kept centered within a 0.375-inch cylindrical copper outer conductor by polyethylene insulating disks spaced about 1 inch apart. The outer conductor is formed into a cylinder around the disks and is held closed by interlocking serrated edges along its longitudinal seam. Two steel tapes are wound around the outer conductor for added strength.

3. Fiber-Optic Cable:

A fiber-optic cable consists of tubes of glass through which data are transmitted as pulses of light. Optical fiber consists of thin glass fibers that can carry information at frequencies in the visible light spectrum and beyond. The typical optical fiber consists of a very narrow strand of glass called the core. Around the core is a concentric layer of glass called the cladding. A typical core diameter is 62.5 microns (1 micron = 10^{-6} meters). Typically Cladding has a diameter of 125 microns. Coating the cladding is a protective coating consisting of plastic, it is called the Jacket.

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8. **What is a computer bus? Explain in detail different types of buses used in computer.** **(8)**

Ans For Answer see Paper 2016, Q.8.

Q.9. Write a note on different types of viruses. **(8)**

Ans **Types of Viruses:**

Following are some important types of viruses:

- Boot Sector Virus
- Chernobal Virus
- Logic Bomb
- Trojan Horse
- Redlof

Boot Sector Virus:

The boot sector virus modifies the program in the boot sector and is loaded into memory whenever computer is turned on. This virus is attached with the executable files i.e., **.exe, .com** and **.dll** files. When the user uses these executable files, the virus attached with these files is also activated and then it infects other files and also performs destructive commands and destroys the data files also.

Chernobal Virus:

The famous chernobal virus deletes all the Microsoft office files and also the partition information from the disk hence causing a major loss data.

Logic Bomb:

Logic bomb, differ from other viruses in that they are set to go off at a certain time and date. A disgruntled programmer, for a defense contractor created a bomb in a program that was supposed to go off two months after he left. Designed to erase in inventory tracking system, the bomb was discovered only by chance.

Trojan Horse:

The Trojan horse covertly places illegal, destructive instructions in the middle of a legitimate program, such as a computer game. Once you run the program, the Trojan horse goes to work, doing its damage while you are blissfully unaware. An example of Trojan horse is FormatC.

Redlof:

The Redlof virus is a polymorphic virus, written in Visual Basic Script. The Virus relies on the Microsoft ActiveX Component vulnerability to automatically execute itself. When executed, the virus locates Folders.htt and infects that file, the Folder.htt is part of Microsoft Windows Active Desktop feature. It searches the user hard-drive and locates infect-able files and appends itself to them.