Inter (Part-I) 2015

Computer Science		PAPER: I
Time: 2.10 Hours	(SUBJECTIVE TYPE)	Marks: 83

SECTION-I

2. Write short answers to any EIGHT (8) questions: (16)

(i) Define application software.

Ans The software which can solve a specific problem is called application software. It is developed to provide audio, video or multimedia entertainment to the user. Application software are of two types: customized software and package software.

(ii) What is bar code reader?

Ans Bar code reader is a device that translate the bar code symbols into digital code. It is also called photoelectric scanner. It is used to read Universal Product Code printed on manufactured products.

(iii) Differentiate between bit and byte.

Ans Bit is the single storage unit. It is derived from binary digit. The binary number is either 1 or 0.

Byte is the combination of 8 bits. It can store single character of data. Its capacity of storage is expressed in number of bytes.

(iv) What is DSL?

Ans DSL is the abbreviation of 'Digital Subscriber Line'. DSL provides high speed digital data transmission over existing telephone lines. Modems are necessary with DSL.

(v) What is network interface card?

Ans Network interface card is such a device that used to communicate over LAN. It recognizes the message or a network and passes onwards to the destination nodes. It connects each computer to the wiring in the network.

(vi) State the purpose of FTP.

Ans File transfer protocol (FTP) is the internet software tool for transferring files from one computer to another. So, FTP is used for downloading and uploading files.

(vii) What is unicode?

Ans Unicode 'or' universal code is the comprehensive set of mathematical and technical symbols (*i.e.*, represent 65536 symbols). It is 16 bits code. It was started to replace ASCII.

(viii) Define synchronous data transmission.

Ans Synchronous data transmission is the type of communication. Large volume of information can be transmitted at the single time with this type of data transmission. A clock is used to control the timing of bits being sent.

(ix) What is broad band?

Ans Broad band is a technique for transmitting large amounts of data, voice and video over long distances simultaneously by modulating each signal onto a different frequency. Using the FDM (frequency division multiplexing) technique, several streams of data can be transmitted simultaneously.

(x) What is privacy issue?

Ans Generally, a privacy policy is a statement or a legal document that discloses some or all of the way a party gathers, uses, discloses, and manages a customer's or client's data.

In the sense of computer, an organization is responsible for keeping the data updated through specific privacy policy.

(xi) What is logic bomb?

Ans A logic bomb is a piece of code intentionally inserted into a software system that will set off a malicious function when specified conditions are met. For example,

a programmer may hide a piece of code that starts deleting files.

(xii) **Write the benefits of password.**

Ans 1. Protection of our personal information.
2. Appropriate access.
3. Effective identity management and access auditing.

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3. **Write short answers to any EIGHT (8) questions: (16)**

(i) **What is control unit?**

Ans The control unit is a component of a computer's central processing unit (CPU) that directs operation of the processor. It tells the computer's memory, arithmetic/logic unit and input and output devices how to respond to a program's instructions.

(ii) **Define memory address.**

Ans Memory address is a data concept used at various levels by software and hardware to access the computer's primary storage.

(iii) **Why does DRAM use more power?**

Ans DRAM (Dynamic Random Access Memory) has an electric current to maintain electrical state. DRAM use more power than SRAM. Because SRAM (Static RAM) has faster chips than DRAM. These chips utilize less power due to its complexity and most modern technology.

(iv) **What is mother board?**

Ans The mother board is a printed circuit board that is the foundation of a computer and allows the CPU, RAM, and all other computer hardware components to function and communicate with each other. Each motherboard has a collection of chips and controllers as the chipset. These boards are typically more efficient and faster than their predecessors.

(v) **Define the role of main memory in computer system.**

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 kind of main memory in it.

(vi) Distinguish between low level and high level languages.

Ans Low level languages are those instructions which are easily understood by computer, *i.e.*, machine / assembly language. While high level languages are those instructions which are easily understood by human being, *i.e.*, C++ or JAVA.

(vii) Define DMA.

Ans DMA is a way 'or' scheme of transferring data from the peripherals into the computer. It is the abbreviation of 'Direct Memory Access'. It has feature of computerized system that allows certain hardware subsystem to access main system memory independently of CPU. In disk, graphic card, NIC, sound cards use DMA. CPU overhead is reduced in this scheme.

(viii) What is FLAGS register?

Ans FLAGS register is the status register in intel X 86 microprocessors that contains the current state of the processor. It has 16 bits.

Carry Flag, Parity Flag, Zero Flag, Sign Flag, etc. are the examples of FLAGS register.

(ix) What is the purpose of Recycle Bin?

Ans A user can delete or moved the items to Recycle Bin. This is the storage area on hard disk for storing the deleted items. The user can restore the items or delete them permanently.

(x) What is my document folder?

Ans This is default folder for storage different kinds of documents. This folder created by windows on installation time.

(xi) Define the term 'Word Processing'.

Ans 'Word Processing' is more than just electronic typing. Word Processing involves creating, editing, formatting and printing documents.

(xii) What is paragraph formatting?

Ans> Paragraph formatting is the setting one or more paragraphs. It includes line spacing, paragraph spaces, indents, alignment, tab stops, borders and shading etc.

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

(i) 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.

(ii) Differentiate between CAD and CAM.

Ans> CAD (computer Aided Design) is used to display design. CAD builds product prototype in software and tests them as a computer object.

While CAM (computer Aided Manufacturing) is used to control all the parts of a manufacturing process. CAM software uses digital design output directly control production machinery.

(iii) How computer can be used in marketing?

Ans> Computer can be used in marketing through provide information about organizations product, distribution system, advertising, personal selling activities and pricing strategies etc

(iv) List some benefits of video conferencing.

Ans> Following are the benefit of video conferencing:

1. Conferencing using video cameras and micro phones.
2. Advance from the teleconferencing.
3. Simulate normal meeting environment.
4. Enable parties to see, hear and present material sitting at remote sites.

(v) How computer can be used in airline system?

Ans> Computer can be used to control passengers aircraft and vehicles. It links different cities and gives full

information about its flight and sees its reservation. It can also be used in air ticketing system.

(vi) How can you merge cells?

Ans Firstly, highlight the cells to be merged. Select the merge cells option from the alignment tab of the format cells dialog box.

(vii) Define sum and average function.

Ans Adds all of its arguments.

Syntax: Sum (number 1, [number 2], . . .)

Sum (A1 : A10), Sum (A1, A5 : A10)

Average function

Average / Arithmetic mean for selected data / arguments.

Syntax: AVERAGE (number 1, [number 2], . . .)

AVERAGE (A1 : A10)

(viii) List name of five search engines.

Ans 1. Google.com   2. Ask.com   3. Altavista.com
4. Infoseek.com   5. Yahoo.com

(ix) Name some ISP's in Pakistan.

Ans PTCL, BrainNET, World online (WOL), Wateen, COMSATS.

SECTION-II

Note: Attempt any THREE (3) questions.

5. What are input devices? Explain any three pointing input devices. (8)

Ans Input Devices:

Input devices accept data in a form that the computer can use, and then sends it to the processing unit. Sometimes, the data is entered directly to the computer and sometimes indirectly. In the first case, the data goes directly to the computer from the source and in the second case; we have to carry out some intermediate handling.

In either case, the task is to gather data to be processed by the computer.

Types of input devices:

There are three general types of input devices:

1. Keyboards
2. Pointing devices
3. Source-data-entry devices

Pointing input devices:

Mouse, touch pad, touch screen, light pen, graphic tablet, pen-based system, scanners and joystick etc. are some types of pointing input devices. Three types are discussed below:

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 wherever we want. It also has buttons on its top which communicate certain commands to the computer while passed. In particular, button is often used to click on an icon to invoke the command.

2. Touch Pad:

The touch pad is a small, flat surface over which we slide our finger, using the same movements as we would with a mouse. As we move the finger, the cursor follows the movement. We "click" by tapping the finger on the pad's surface or by pressing button positioned close by the pad. Touch pads are now common on the portable computers (laptops).

3. Touch Screen:

A touch screen is a video display screen that is sensitized to receive input from simply touching our fingers onto it. It is covered with a plastic layer, behind which are invisible beams of infrared light. We simply touch the provided buttons or menus and get the information on the display screen accordingly.

6. **What is Network Protocol? Discuss different LAN protocols.** (8)

Ans **LAN's Protocols:**

Networks have certain rules, called Protocols, to send and receive data, and it is defined in the network software. The most common of them are explained as under:

(1) **Ethernet:** Currently, this is the most commonly used protocol. It uses a high-speed network cable and bus topology, so it is relatively simple and cheaper. Since all the nodes (computers) use the same cable to send and receive data, they must follow a set of rules about when to communicate, otherwise, two or more computers could transmit at the same time, causing lost messages. Before transmitting the data, a nod listens to find out if the cable is in use. If so, the node must wait. When the cable is free from other transmission, the node can begin transmitting immediately. This process is also known as CSMA/CD (Carrier Sense Multiple Access with Collision Detection).

If by chance, two nodes transmit data at the same time, the messages collide. When a collision occurs, a special message, lasting a fraction of a second, is sent out over the network to indicate that it is jammed. Each node stops transmitting, waits a random period of time, and then transmits again. Since the wait period for each node is random, it is unlikely that they will begin transmitting at the same time again.

(2) **Token Ring:** It is closely associated with IBM, works on the concept of a ring network topology and a token (a kind of electronic signal). The method of controlling access to the shared network cable is called token passing.

Only one token is available on the network. When a node on the network wishes to transmit, it first captures the

token, only then it can transmit data. When the node has sent its message, it releases the token back to the network. Since only one token is circulating around the network, only one device is able to access the network at a time. Thus no collision occurs but the only disadvantage is its slow data transfer rate.

(3) **ARCnet:** The ARCnet (Attached Resource Computer network) has both a topology and networking technology all its own. It uses either twisted-pair wire or coaxial cable, and the star topology is informed with hubs attached to the network.

The original ARCnet protocol was very slow, but it became popular because it was inexpensive, reliable, and easy to set up and to expand. Fast ARCnet increased the transmission rate to 100 Mbits per second and includes the capability to use fiber optic cable.

(4) **TCP/IP** (Transmission Control Protocol / Internet Protocol): TCP/IP is the protocol used by every computer on the Internet. A protocol is a set of rules and procedures that defines how computer receive and transmit data over the network. Every computer on the Internet must have TCP/IP configured.

TCP/IP ensures a reliable connection between the computers communicating over the Internet. It also defines a mechanism through which every computer on the Internet is identified separately.

TCP/IP software differs for different computers but it always present the same interface to the network. It does not matter if the system on the other end is a supercomputer, a mainframe, minicomputer or microcomputer; as long as it is using TCP/IP, it can send and receive data through the Internet.

(5) **ISDN** (Integrated Seraries Digital Network): ISDN 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. Basic rate ISDN provides better quality than analog connections and more reliable digital connections at higher speeds than those offered by analog connections.

(6) **DSL (Digital Subscriber Line):** DSL provide high speed, digital data transmission from homes and businesses over existing telephone lines. The exiting lines are analog and the transmission is digital, so modems are necessary with DSL technology. DSL is a popular alternative to ISDN.

7. What is data transmission mode? Explain different types of data transmission. (8)

Ans Data Transmission Mode:

The way in which data is transmitted from one place to another is called data transmission mode.

Types of Data Transmission Modes:

There are two types of data transmission modes. These are:

1) Parallel Transmission.   2) Serial Transmission

(1) Parallel Transmission:

In parallel transmission, bits of data flow concurrently through separate communication lines. The automobile traffic on a multi-lane highway is an example of parallel transmission. Inside the computer, binary data flows from one unit to another using parallel mode.

(2) Serial Transmission:

In serial data transmission, bits of data flow in sequential order through single communication line. The flow of traffic on one-lane residential street is an example of serial data transmission mode. Further, Serial transmission is of two types:

(i) Asynchronous Transmission:

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.

(ii) Synchronous Transmission:

In synchronous transmission, large volumes of information can be transmitted at a time. In this type of transmission, data is transmitted block-by-block or word-by-word simultaneously. Each block may contain several bytes of data.

8. Define language processor or translators and their use. Explain different types of language processors.

Ans Language Processors or Translators:

Language processors or translators are softwares used to translate the source program (code written in high level language) or assembly language program into machine code. The language processor is of three types:

1) Compilers.
2) Interpreters.
3) Assemblers.

Compiler:

The translator program that translates the complete source code (written in high-level language) as a whole in machine code before execution is called compiler. The compiler takes source code as input and returns object code as output. The object code or program can be executed a number of times without translating it again.

Interpreter:

A translator, translates instructions of source program into machine code one after the other and execute it immediately before the translation of the next instruction is called interpreter.

An interpreted program runs slower than a compiled program because an interpreted program has to be translated every time by an interpreter, to execute it. Although, the process of interpreting a program is slower but it is very useful during program development as errors can be detected and corrected very easily.

Assembler:

A program written in assembly language must be translated into machine code before its execution on the

computer. A translator program that translates the program written in assembly language into machine code is called assembler.

9. Describe different security threats to data security. Give solution to these threats.

Ans: **Security Threats:**

There are many methods used to protect the private data or information from illegal use. Some authorized user of the data may unintentionally delete or change sensitive data.

There are the following solutions to this problem:

1) Firstly, the users must be assigned proper rights to minimize such events. Only the authorized users with certain rights may be allowed to delete or modify data after following a step-by-step process.

2) Backup of data should be taken regularly to recover from this sort of situation.

3) Proper password protection should be used to use any resource.

4) A log file should also be maintained to keep track of all the activities on the data/files.

5) Some strong encryption algorithm should be used.

6) The solution to infected data is that proper virus scanning software should be used to scan all data coming into the organization.

7) Computers and all backing storage devices should be placed in locked rooms with only authorized access to these resources.

8) Authorized users must be asked to change their passwords periodically.

9) Very short passwords should be avoided.

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An interpreted program runs slower than a compiled program because an interpreted program has to be translated every time by an interpreter, to execute it. Although, the process of interpreting a program is slower but it is very useful during program development as errors can be detected and corrected very easily.

(3) Assembler

A program written in assembly language must be translated into machine code before its execution on the computer. A translator program that translates the program written in assembly language into machine code is called assembler.

Q.9. Explain different causes of viruses.   (8)

Ans: Causes of Virus

Following are the means though which viruses may be transferred from one computer to another.

E-Mail

Today, most of the viruses spread due to receiving e-mail messages that contains viruses. When a user opens such an infected message, the virus is also loaded into the computer memory and attaches copies of itself with many other program files loaded into the memory.

Networks

Internet and other networks are also become reason of virus. For example when you download some executable file or data from the Internet or from a shared disk on the network, the infected files may be attached with the downloaded data that ultimately infects the computer.

Removable Storage Media

When you copy the data from one computer to another by using a removable media, the infected files can be transferred to your computer.

Pirated Software

The virus can also infect the computer by using pirated software. Some companies may intentionally attach some virus programs into their software. This program may activate when it does not find some special files like license files on the computer.

Safeguards Against Viruses

Computer can be made save from getting infected by a virus by using following ways.

- Never open unknown e-mail messages, and also scan using antivirus all mail messages.
- Minimize the data transfer between computers through the use of floppy disks and other removable media.
- While using the Internet, do not download free-ware program without first checking it for virus.
- Always use anti-virus program with latest version, to delete the infected programs from your system.
- Always keep backup of your data. This backup will be useful if a virus deletes your data or modifies it.

SECTION-III

(Practical Part)

Note: Attempt any THREE (3) questions.

(A) Write a procedure to change the desktop background. **(5)**

Ans To change the desktop background:

1. Open Desktop background by clicking the start button.
2. Clicking Control Panel.
3. Clicking Appearance and Personalization and then clicking desktop background.
4. Click the picture or color you want for your desktop background.

(B) Write the procedure to insert Word Art in MS-Word. **(5)**

Ans

1. On the insert menu, point to picture, and then Click WordArt.
2. In the WordArt Gallery dialog box, double-click the style that you want.
3. In the Edit WordArt Text dialog box, type your text and select the font and size that you want.
4. Click Bold or Italic to make all the text bold or italic.
   (Note: You can't apply Bold or Italic to only a selected part of the text).
5. In the Edit WordArt Text dialog box, click OK.
   Your text is inserted into the document.

(C) Write the procedure for printing document in MS-Word. (5)

Ans

1. Open an existing word document or start a new document and type your text.
2. When document will be ready to print, click File in the top left-hand corner of your document. Move down and click Print in the menu. This will bring up the 'Print' dialog box.

'OR'

Press Ctrl + P for 'Print' dialog box.

3. Choose the settings you need, i.e., how many copies to be printed, paper properties, etc.
4. When you will be happy with your settings, click 'Print'. The document will now start printing.

(D) Write the procedure for rotating text in cell. (5)

Ans **In MS-EXCEL:**

1. Select the cell(s) that you wish to rotate the text for.
2. Right-click and then select "Format Cells" from the context menu.
3. When the Format Cells Window appears, select the Alignment tab.

4. Then set the number of degrees that you wish to rotate the text. This value ranges from 90 degrees to 90 degrees.

5. Now when you return to your spreadsheet, the text should be rotated.

(E) Write the procedure to add two numbers in MS-Excel.   (5)

Ans

1. Decide what column of numbers or words you want to add up.

2. Select the cell where you would like the answer to populate.

3. Type the equals sign then SUM
    Like this: "= SUM"

4. Type out the first cell reference, then a colon, then the last cell reference.
    Like this : = SUM (A2 : A3)

5. Press ENTER. Excel will add these two numbers in cells A2 to A3.