

## Chapter 2 - Software Concepts

### Type A: Very Short Answer Questions

1.	<b>Differentiate between hardware and software.</b>
Ans	<b>Hardware</b> are the physical tangible components of a computer system whereas, <b>Software</b> are the computer programs that govern the operation of computers.
2	<b>How can computer software be classified?</b>
Ans	Computer software can be classified into two categories. <ol style="list-style-type: none"><li>1. System software</li><li>2. Application software.</li></ol>
3	<b>What are two categories of system software?</b>
Ans	<ol style="list-style-type: none"><li>1. Operating system</li><li>2. Language processor</li></ol>
4	<b>What is an operating system? What is its role?</b>
Ans	An <b>operating system</b> is a program which acts as an interface between a user and the hardware. It makes the computer system convenient to use and use computer hardware in an efficient manner.
5	<b>Name various types of operating systems.</b>
Ans	<ol style="list-style-type: none"><li>1. Single program OS.</li><li>2. Multiprogram OS.</li><li>3. Time Sharing OS.</li><li>4. Real Time OS.</li></ol> Multiprocessing OS.
6	<b>Name various language processors.</b>
Ans	<ol style="list-style-type: none"><li>1. Assembler</li><li>2. Interpreter</li><li>3. Compiler.</li></ol>
7	<b>What is application software? What are three categories of application software?</b>
Ans	<b>Application software</b> is the set of programs necessary to carry out operations for a specified application. Following are the three categories of application software: <ol style="list-style-type: none"><li>1. Packages</li><li>2. Utilities</li><li>3. Customised software</li><li>4. Developer tools</li></ol>
8	<b>Compare packages and utilities.</b>
Ans	General application softwares are known as packages. Some of the packages are: word processor, spreadsheets, graphics etc whereas, utility programs assist the computer in maintaining its performance. Some of the utilities are: text editors, backup utilities, antivirus software.
9	<b>Differentiate between a compiler and interpreter.</b>
Ans	A <b>compiler</b> converts an HLL program in machine language in one go whereas, an <b>interpreter</b> converts an HLL program into machine language line by line and simultaneously executes the converted line.
10	<b>What are developer tools? Name a few.</b>
Ans	Some most commonly used developer tools are : <ol style="list-style-type: none"><li>1. Compiler</li><li>2. Interpreters</li><li>3. Integrated Development Environment (IDE).</li></ol>
11	<b>What is an IDE?</b>
Ans	IDE ( <b>I</b> ntegrated <b>D</b> evelopment <b>E</b> nvironment) is an application program consisting of different development tools needed for developing an application.
12	<b>What is a virus? What is anti-virus software?</b>
Ans	<b>Viruses</b> are malicious codes/programs that cause damage to data and files on a system. <b>Anti-virus</b> software is a software utility that detects, prevents, and removes viruses, worms, and other malware from

a computer.

## Type B: Short Answer Questions

<b>1</b>	<b>What is system software? What role does it play in functioning of the computer?</b>												
<b>Ans</b>	The software that controls internal computer operations is called System software. The software that controls internal computer operations (viz. reading data from input devices, transmitting processed information to the output devices, checking system components, converting data/instructions to computer understandable from etc.)												
<b>2</b>	<b>How are following operating systems different from one another?</b> <b>(i) Multiprogramming OS and multiprocessing OS</b> <b>(ii) Time sharing OS and real time OS.</b>												
<b>Ans</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2"><b>(i) Multiprogramming OS and multiprocessing OS</b></th></tr> <tr> <th style="width: 50%;"><b>Multiprogramming OS</b></th><th style="width: 50%;"><b>Multiprocessing OS</b></th></tr> <tr> <td>✓ A multiprogramming operating system allows shared use of the processor or processors that is it emulates a multi processor machine.</td><td>✓ A multiprocessing operating system is an operating system that can utilize multiple processors.</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2"><b>(ii) Time sharing OS and real time OS</b></th></tr> <tr> <th style="width: 50%;"><b>Time sharing OS</b></th><th style="width: 50%;"><b>Real time OS</b></th></tr> <tr> <td>✓ This OS uses the time sharing technique.</td><td>✓ In real time OS, the jobs have fixed deadlines and the jobs have to be completed within their deadlines.</td></tr> </table>	<b>(i) Multiprogramming OS and multiprocessing OS</b>		<b>Multiprogramming OS</b>	<b>Multiprocessing OS</b>	✓ A multiprogramming operating system allows shared use of the processor or processors that is it emulates a multi processor machine.	✓ A multiprocessing operating system is an operating system that can utilize multiple processors.	<b>(ii) Time sharing OS and real time OS</b>		<b>Time sharing OS</b>	<b>Real time OS</b>	✓ This OS uses the time sharing technique.	✓ In real time OS, the jobs have fixed deadlines and the jobs have to be completed within their deadlines.
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<b>3</b>	<b>Write short notes on the following:</b> <b>(i) Wordprocessor</b> <b>(ii) Electronic spreadsheet</b> <b>(iii) dbms</b> <b>(iv) Graphic, multimedia and presentation software</b> <b>(v) DTP software.</b>												
<b>Ans</b>	<p><b>(i) Wordprocessor</b> –It is a package that process textual matter and creates organized and flawless documents. Following are some features of Wordprocessor:</p> <ol style="list-style-type: none"> <li>1. Word processors provide variety of fonts and print styles.</li> <li>2. Information can be saved for later use.</li> <li>3. Word processors provide the facility of spell-check, dictionary and thesaurus.</li> <li>4. Word processors offer very useful utility known as mail-merge.</li> </ol> <p><b>(ii) Electronic spreadsheet</b> –An <b>electronic spreadsheet</b> is a program that accepts data in a tabular form (in row and columns) and allows users to manipulate/ calculate/ analyze data in the desired manner. following are some useful features of electronic spreadsheets are:</p> <ol style="list-style-type: none"> <li>1. Spreadsheets cannot only represent data values but also their relationships.</li> <li>2. Spreadsheets provide facilities of cutting, pasting, moving, copying data values or formulae or formats etc.</li> <li>3. Numerous built-in functions are available in spreadsheets.</li> <li>4. Data can graphically be represented through charts/graphs of many types.</li> </ol> <p><b>(iii) dbmd</b> –DBMS is an acronym for Data Base Management System. A <b>dbms</b> is software that can effectively store, manipulate, and handle bulk of data. A dbms provides utilities for data analyses and data based management.</p> <p><b>(iv) Graphics, multimedia and presentation software</b> –The application software that manipulates images is known as <b>Graphic Software</b> and the software that incorporates images, text, sound, computer animation, and video sequences is known as <b>multimedia software</b>.  The application software that can create professional looking visual aids is called <b>presentation Graphics Software</b>.  Some most popular graphics, multimedia and presentation packages are Coreldraw, Macromedia®, Power point etc.</p> <p><b>(v) DTP software</b> –The software that handles page layout by combining the functions of a traditional</p>												

	typesetter and a layout artist, is known as <b>Desktop Publishing Software</b> . The design and layout of complete book or journal can be achieved without much trouble using a suitable DTP package.
<b>4</b>	<b>Discuss the role of utility software in the context of computer performance.</b>
<b>Ans</b>	utilities are those application programs that assist the computer by performing housekeeping functions like backing up disk or scanning/cleaning viruses or arranging information etc.
<b>5</b>	<b>Why is disk Defragmentor useful?</b>
<b>Ans</b>	Disk Defragmentor speeds up disk access by rearranging the files and free space on your computer; so that files are stored in contiguous units and free space is consolidated in one contiguous block.
<b>6</b>	<b>How is backup utility useful? Is it necessary to take backup of data?</b>
<b>Ans</b>	The files or folders or even drives can be backed up using this utility. You can back up files to floppy disks, a tape drive or even on another computer on your network. Yes it is necessary to take backup of data because in case of any damage or data-loss, this backed up data may be used.
<b>7</b>	<b>What is a computer virus? How can it affect your computer?</b>
<b>Ans</b>	<b>Computer viruses</b> are malicious codes/programs that cause damage to data and files on a system. Viruses damage or delete files, slow down your computer and invade your email program.
<b>8</b>	<b>Why are antivirus software considered important?</b>
<b>Ans</b>	Antivirus software considered important because it scans your disk for viruses and removes them, if any virus is found. Moreover, some antivirus software remains present in memory all the time so that they can detect the viruses and counterattack them.
<b>9</b>	<b>Why do think IDEs are useful in application development?</b>
<b>Ans</b>	IDEs are useful in application development because it consists source code editor, compiler, debugger, graphical user interface (GUI) builder, build automation tools, and code generator.
<b>10</b>	<b>What are different types of threats to computer security?</b>
<b>Ans</b>	Following are the types of threats to computer security: <ol style="list-style-type: none"> <li>1. Viruses <ul style="list-style-type: none"> <li>✓ Worms</li> <li>✓ Trojans</li> </ul> </li> <li>2. Spyware</li> <li>3. Adware</li> <li>4. Spamming</li> <li>5. PC Intrusion <ul style="list-style-type: none"> <li>✓ Denial of service</li> <li>✓ Sweeping</li> <li>✓ Password Guessing</li> </ul> </li> <li>6. Phishing.</li> </ol>
<b>11</b>	<b>What type damages can be caused by viruses to you computer?</b>
<b>Ans</b>	<ul style="list-style-type: none"> <li>✓ Damages or delete files.</li> <li>✓ Slow down your computer.</li> <li>✓ Invade your email program.</li> </ul>
<b>12</b>	<b>What are Malware? What type of damages can they cause to your computer?</b>
<b>Ans</b>	Malware is a general term used to refer to viruses, worms, spyware, adware etc. <ul style="list-style-type: none"> <li>✓ Damages or delete files.</li> <li>✓ Slow down your computer.</li> <li>✓ Invade your email program.</li> </ul>
<b>13</b>	<b>What is spam? Why has it become a big Internet issue?</b>
<b>Ans</b>	Spamming refers to the sending of bulk-mail by an identified or unidentified source. It has become a big internet issue because bulk-advertising mail is sent to many accounts.
<b>14</b>	<b>What do you understand by PC intrusion?</b>
<b>Ans</b>	Intrusion is the term used when an unauthorized third party gains access to your PC. Generally via the Internet. PC Intrusion can occur in any of the following form: <ol style="list-style-type: none"> <li>1. Sweeper Attack</li> </ol>

	2. Denial of Services 3. Password Guessing.
15	<b>What measure would you take to avoid:</b> (i) <b>Virus attack</b> (ii) <b>Spyware</b> (iii) <b>Adware</b> (iv) <b>Spam</b> (v) <b>PC intrusion</b>
Ans	(i) Virus attack –Use Anti-Virus (ii) Spyware –Use Anti-Spyware software. (iii) Adware –Download updates regularly. (iv) Spam –use Anti-spam software. (v) PC Intrusion –Firewall.
16	<b>What are denial-of-service and Sweeper attacks?</b>
Ans	<b>Denial of Services</b> –This type of attack eats up all the resources of a system and the system or applications come to a halt. Example of such an attack is flooding a system with junk mail. <b>Sweeper Attack</b> –This is another malicious program used by hackers. It sweeps i.e., deletes all the data from the system.
17	<b>What is Phishing?</b>
Ans	<b>Phishing</b> is the criminally fraudulent process of attempting to acquire sensitive information pertaining to a user.

### TYPE C: Long Answer Questions

1	<b>Discuss different types of utility software.</b>
Ans	Following are the different types of utility software: 1. <b>Text Editor</b> –This utility program is used for creating, editing text files. Text Editor Software supports special command for text editing i.e., you can insert, delete, find, replace characters, lines and paragraphs etc. 2. <b>Backup Utility</b> –This utility program facilitates the backing-up of disk. The files or folders or even drives can be backed up using this utility. You can back up files to floppy disks, a tape drive or even on another computer on your network. 3. <b>Compression Utility</b> –This utility program facilitates compression of files. Large files can be compressed so that they take less storage area. When needed, these compressed files can be exploded back to their original form. 4. <b>Disk Defragmentor</b> –This utility program attempts to minimize the fragmentation on your disk. Disk Defragmentor speeds up disk access by rearranging the files and free space on your computer, so that files are stored in contiguous units and free space is consolidated in one contiguous block. 5. <b>Antivirus Software</b> –This utility program ensures virus-free work environment. Antivirus software scans your disk for viruses and removes them, if any virus found. Moreover, some antivirus software remains present in memory all the time so that they can detect the viruses and counterattack them.
2	<b>What do you understand by computer security, various threats to computer security and possible solutions to computer security?</b>
Ans	<b>Computer security</b> is the ability of a system to protect information and system resources with respect to confidentiality and integrity. Various threats to computer security with solution 1. <b>Viruses, Spyware, Adware:</b> ✓ <b>Active protection</b> Use Anti-Virus and Anti-Spyware software. Download Updates regularly. Run frequent full-system scans. ✓ <b>Preventive measures</b> Keep your system up-to-date. Use caution when downloading files on the internet.

	<p>Be careful with email.</p> <p><b>2. Spam:</b></p> <ul style="list-style-type: none"><li>✓ <b>Active protection</b> Use Anti-spam software.</li><li>✓ <b>Preventive Measures</b> Keep your email address private. Use alternate style of writing your email addresses on the web.</li></ul> <p><b>3. PC Intrusion</b></p> <ul style="list-style-type: none"><li>✓ <b>Active protection</b> Authorization Authentication Firewall</li><li>✓ <b>Preventive Measures</b> Use proper file access permissions when sharing files on the internet. Disconnect from the internet when away.</li></ul>
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