Edu430 Final Subjective Prepare by Mubarak Ali

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Q: What is cache memory?

Cache is very fast and small memory that is placed in between the CPU and the main memory. Cache memory is used to reduce the average memory access times. This is done by storing the data that is frequently accessed in main memory addresses therefore allowing the CPU to access the data faster. This is due to the fact that cache memory can be read a lot faster than main memory. *Cache memory* is an intermediate form of storage between the registers (located inside the processor and directly accessed by the CPU) and the RAM.

The functions of cache memory are:

- The CPU uses the cache memory to store instructions and data that are repeatedly required during the execution of programs, thus improving the performance and speed of the whole system.
- It also avoids the need to access the dynamic RAM to retrieve the same data repeatedly.

Q: what is Byte?

The byte is a unit of digital information that most commonly consists of eight bits, representing a binary number. Historically, the byte was the number of bits used to encode a single character of text in a computer and for this reason it is the smallest addressable unit of memory in many computer architectures.

Q3: what is the function of recognition of speed of window?

Windows Speech Recognition (WSR) is a speech recognition component developed by Microsoft for the Windows Vista operating system that enables the use of voice commands to control the desktop user interface; dictate text in electronic documents and email; navigate websites; perform keyboard shortcuts; and to operate the mouse cursor. It also supports the creation of custom macros to perform additional tasks.

Functions

WSR allows a user to control a computer, including the operating system desktop user interface, through voice commands. Applications, including most of those bundled with Windows, can also be controlled through voice commands. By using speech recognition,

users can dictate text within documents, email, and forms; control the operating system user interface; perform keyboard shortcuts; and move the mouse cursor.

WSR uses a local speech profile to store information about a user's voice. Accuracy of speech recognition increases through use, which helps the feature adapt to a user's grammar, speech patterns, vocabulary, and word usage. Speech recognition also includes a tutorial to improve accuracy, and can optionally review a user's personal documents—including email—to improve its command and dictation accuracy.

Q: What is file?

A file is an object on a computer that stores data, information, settings, or commands used with a computer program. In a GUI (graphical user interface), such as Microsoft Windows, files display as icons that relate to the program that opens the file. For example, the picture is an icon associated with Adobe Acrobat PDF files. If this file was on your computer, double-clicking the icon in Windows would open that file in Adobe Acrobat or the PDF reader installed on the computer.

Q5: What is HTML ? Its history? What point should be in mind while coding HTML?

HTML is a computer language devised to allow website creation. These websites can then be viewed by anyone else connected to the Internet. It is relatively easy to learn, with the basics being accessible to most people in one sitting; and quite powerful in what it allows you to create. It is constantly undergoing revision and evolution to meet the demands and requirements of the growing Internet audience under the direction of the » W3C, the organisation charged with designing and maintaining the language.

HTML is the standard markup language for creating Web pages.

- HTML stands for Hyper Text Markup Language
- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

History

The first version of HTML was written by Tim Berners-Lee in 1993. Since then, there have been many different versions of HTML. The most widely used version throughout the 2000's was HTML 4.01, which became an official standard in December 1999. Most pages on the Web today were built using either HTML 4.01 or XHTML 1.0. However, in recent years, the W3C (in collaboration with another organization, the WHATWG), has been working on a brand new version of HTML, HTML5. Currently (2011), HTML5 is still a draft specification, and is not yet an official standard.

Important Points

HTML consists of a series of short codes typed into a text-file by the site author — these are the tags. The text is then saved as a html file, and viewed through a browser, like *Internet Explorer* or *Netscape Navigator*. This browser reads the file and translates the text into a visible form, hopefully rendering the page as the author had intended. Writing your own HTML entails using tags correctly to create your vision. You can use anything from a rudimentary text-editor to a powerful graphical editor to create HTML pages.

The most important HTML5 tags would be structure tags. Learn how to properly outline your page with the right semantic tags, such as heading, nav, article, section, footer, h1, ect. Then make sure you understand where and why to use these tags. These structure tags will get you through most HTML5 pages.

Q6: Merits and demerits of HTML?

Advantages of HTML:
1. First advantage it is widely used.
2. Every browser supports HTML language.
3. Easy to learn and use.
4. It is by default in every windows so you don't need to purchase extra software.

Disadvantages of HTML:
1. It can create only static and plain pages so if we need dynamic pages then HTML is not useful.
2. Need to write lot of code for making simple webpage.
3. Security features are not good in HTML.
4. If we need to write long code for making a webpage then it produces some complexity.

Disadvantages & Advantages of HTML

Disadvantages	Advantages
•It takes a lot of time to create anything that even resembles a webpage. •It isn't as flexible as other webpage developers like Dreamweaver. • It is not centralised, all the webpages must be edited separately.	•Easy to create a webpage. •It's plain text so it's easy to edit. •Fast to download because the text is compressible. •Can be used to present just about anything on a webpage.

Q: what is map? Types of maps.

A map is an ADT (Abstract Data Type) where key-value pair (k-v) are stored in an array. The 'key' is an identifier for some kind of data, and the 'value' is the content that is being identified or saved. Map data type is ideal to use in look up type situations where there is an identifying value and an actual value that is represented by the identifying value. A few examples where the map data type can be used are:

- Student ID numbers and last names
- House numbers on a street and the number of pets in each house
- Postal codes and names of cities
- Driving licenses and last names

Types of maps

1. **Array:** An array refers to a set of similar elements. It consists of an index. This acts as a pointer to each element of this structure. Unlike most other data storage types, arrays have a fixed length. Its elements are placed in a contiguous fashion. Each of the data item has a fixed memory address.

2. **Stack:** Stack refers to an orderly arrangement of data. It consists of just one end. This end is used for both, data addition as well as removal. It is said to follow the LIFO pattern. 'Push' and 'Pop' are the two functions of this data structure.
3. **Queue:** A queue is a list with a linear pattern which has two ends: front and rear. The front end allows deletion of data items from the list. The rear end allows insertion of data items into the list.
4. **Linked List:** A linked list is a collection of objects which are linked to each other in a linear pattern. Each of these objects is called a node. The first object is called the front node or the head. Each of the nodes store some data in them.
5. **Set:** Finite set is a mathematical concept, based on which the 'set' storage type is implemented. This data structure consists of mathematical functions defining the conditions and elements belonging to it.
6. **Graph:** A graph consists of a bounded set of nodes (also termed as vertices). A pair of two nodes is called an edge. Each node has some data associated with it. Whereas, the edges indicate the pointers between the nodes.
7. **Tree:** A tree consists of a set of nodes which are linked via pointers. Each structure has a root node and branches containing the remaining data nodes.
8. **Hash Table:** Hash table is a type of table whose main function, in addition to data storage, is mapping the keys to values. The table has some keys to be mapped, a hash function, and buckets. Each bucket is an array which stores data.
9. **File:** A file is a collection of multiple records. Each record consists of one or more elements. These elements are called fields. In case of this data structure, every record is assigned a field and a key.

Q: Define mouse

A computer mouse is an input device that is most often used with a personal computer. Moving a mouse along a flat surface can move the on-screen cursor to different items on the screen. Items can be moved or selected by pressing the mouse buttons (called clicking).[1] Today's mice have two buttons, the left button and right button, with a scroll wheel in between the two.

Q: Define narrator

Microsoft Narrator, also called Narrator, is a free screen reader utility included with Microsoft Windows. While not as robust as a full-function screen reader, it can read dialog boxes and window controls in most of the basic applications for Windows. Good examples of Narrator's uses are basic navigation, aiding in the installation of a different screen reader, or as a backup reader during updates.

Q: Define web 2.0

Web 2.0 is the term given to describe a second generation of the World Wide Web that is focused on the ability for people to collaborate and share information online. Web 2.0

basically refers to the transition from static HTML Web pages to a more dynamic Web that is more organized and is based on serving Web applications to users.

Q: Define homepage

A home page is a webpage that serves as the starting point of website. It is the default webpage that loads when you visit a web address that only contains a domain name. For example, visiting https://techterms.com will display the Tech Terms home page. The home page is located in the root directory of a website.

Q: Define aliasing

Aliasing describes a situation in which a data location in memory can be accessed through different symbolic names in the program. Thus, modifying the data through one name implicitly modifies the values associated with all aliased names, which may not be expected by the programmer. As a result, aliasing makes it particularly difficult to understand, analyze and optimize programs. Aliasing analyzers intend to make and compute useful information for understanding aliasing in programs.

Q: Define charts and their uses in classroom

Definition: A chart is a group of related fa cts presented in the form of a diagram, table, graph, or other visually organized model.

Characteristics of Charts:

1. be clear, easy to understand and easy to find.
2. display content that is current and supports complex skills.
3. have a clear purpose.
4. include steps for how to do specific strategies or procedures.
5. have visuals including symbols, pictures, or photos to go with words.

Benefits

Charts are an excellent tool that can help students become independent thinkers and problem solvers when working to master the CCSS. And although the standards are complex, when the processes are broken down and displayed for students, they can more easily internalize and master them. Charts don't have to be perfect! They are most successful when they are created by or with students, and modified or altered as students' understanding of the concept changes.

Q: Benefits of ICT

ICT or Information and Communication Technology is the infrastructure that helps you to enter the digital world! There is no universal definition for ICT; this term is usually used to refer to all devices connected with information and communication technologies. These networking components unite people all over the world, including governments, companies and nonprofit agencies in one network. ICT combines the internet-based and mobile technology spheres. It also includes non-modern technologies like landed telephones, television and radio broadcast.

1. Resources This is one of the main benefits of ICT to students and teachers. When they use the internet and communication devices, they can enter a world of endless possibilities and information. Students can learn to become independent and effective learners. Teachers can also use the resources of the internet to make their lectures and classes more interesting.
2. Love of ICT New technologies can provide a lot of possibilities for students; however, their main interest in these technologies lies in its entertainment factor. If students can combine their desire for fun with a need for learning, they will become destined for success.
3. Relevance around global world: When students use ICT, they connect with all people around the globe. It`s necessary for them to stay active in the network to learn about new possibilities. It will be valuable for students to learn about the possibilities connected to their future education or jobs.
4. Good for the Environment When you use computers instead of books and notebooks, you save a lot of trees from getting cut down. Deforestation is one of the major problems of humanity. We use too many resources for our needs. That is why ICT provides new possibilities to save trees, and also helps students understand the necessity of nature.
5. Useful for Disabled Students Students with health problems can now live in a world of possibilities by using a computer; they can learn and study even at their homes. Therefore, all students can be placed on equal footing to get the necessary education
6. Self-regulated learning: Students can become much more independent in learning when they have access to the resources of the global network. A teacher can teach them the basis of how to search for information on the internet, and after that, students may decide which website they should use to get the information they need.
7. Unity with the world There is no reason why students should be limited to the borders of their countries. With the help of ICT, they can chat and cooperate with people all over the world. For instance, they can easily learn new languages by communicating with native speakers!
8. Teacher’s community ICT in the education sector provides benefits for teachers too. They can use forums, communities and other organizations to help their students.

Moreover, it will provide more professionalism in the sphere of pedagogy. It can also develop new ways and methods of studying.

9. Practical Use: Students can put their knowledge into practice by using internet and communication technologies. For instance, if they learn how to speak foreign languages, they can try to work as translators. If they study programming, they can try to develop landing pages, apps, etc.
10. Interactive classes Teachers may use new technologies to improve their lessons by getting more interesting materials and showing them off! For instance, it is possible to use interactive blackboards to study mathematics, languages, etc.

Q: Why teaching is nobel profession?

"*A teacher is never an ordinary person. Construction and destruction can be produced in his lap."* The above given quotation by Chanakya shows the power of teachers and teaching. Teaching is a very important activity on which the base of any nation and culture is established. So let's see what teaching is.

The word 'teaching' means the work of a teacher to provide knowledge and guidance. It is one of the oldest and noblest services to the society in any culture. But the question arises if teaching is a profession or a duty first. According to The Oxford Dictionary the word 'profession' means 'a paid occupation' and 'duty' means 'a moral responsibility'. So it's better to call teaching a duty than a profession. Let's consider that this noble profession is a duty and discuss its importance then. Teaching not only shows the right path that the students should follow but also prepares the human resource for the further development of the nation. It has the potential to have a great impact in the molding of the next generation. That is why education should be valued by social institutions like government, the church, the family and civil society. Therefore teaching is:

A process to impart knowledge and information
A process of causing change
A process to instruct and guide others
Teaching is the noblest among all the professions since all professionals underwent education with a teacher. It's also a process to prepare the next generation of skilled professionals and workers like politician, engineers, doctors, policemen, priests, educators, legislators and good citizens. Teaching, therefore, is considered as a means for which God uses a teacher as an instrument to touch lives.

Q: Define virtual learning

Usually the common team used in “Virtual learning environment (VLE)”. “A virtual learning environment (VLE) is a set of teaching and learning tools designed to enhance a student's learning experience by including computers and the Internet in the learning process”

Process of learning using any of the VLE is virtual learning.

- Computer-Based learning*:* Instructions are delivered by the computer or software installed in the computer
- *Internet-Based:* This is similar to computer based learning. But its not the software in the computer but the instructions are delivered through web
- *Remote Teacher Online:* The teachers is not physically present, but delivers the lecture virtually
- *Blended Learning:* This combines traditional face-to-face instruction and use of any other virtual learning environment
- *Facilitated Virtual Learning:* This is *computer-based*, *Internet-based*or *remote teacher online* instruction that is supplemented by a human “facilitator.”

Similar forms of virtual learning are sometimes grouped into broader categories:

- *Online Learning*: This is any form of instruction that takes place over the Internet.
- *Full-Time Online:* This is online learning with no regular face-to-face instruction or facilitation.
- eLearning : learning conducted via electronic media, typically on the Internet.

Q: Define WWW world wide web in detail.

In British a vast network of linked hypertext files, stored on computers throughout the world, that can provide a computer user with information on a huge variety of subjects.

In America, a group of Internet sites interconnected by means of hypertext, providing access to images and sound in addition to text.

Q: Define E-Government.

E-Government refers to the use of internet technology as a platform for exchanging information, providing services and transacting with citizens, businesses, and other arms of government. E-Government may be applied by the legislature, judiciary, or administration, in order to improve internal efficiency, the delivery of public services, or processes of democratic governance.

Q: Describe the term database.

A database is a collection of information that is organized so that it can be easily accessed, managed and updated. Data is organized into rows, columns and tables, and it is indexed to

make it easier to find relevant information. Data gets updated, expanded and deleted as new information is added. Databases process workloads to create and update themselves, querying the data they contain and running applications against it.

Q: write about software for presentation.

1. Microsoft Office PowerPoint is a presentation program developed for the Microsoft Windows and Mac OS computer operating systems. Businesspeople, educators, and trainers use it often. It is a component of the Microsoft Office system. In PowerPoint, as in most other presentation software, text, graphics, movies, and other objects are positioned on individual pages or "slides". The "slide" analogy is a reference to the slide projector. Slides can be printed, or (more often) displayed on-screen and navigated through at the command of the presenter. Slides can also form the basis of webcasts.
2. Google Slides offers a simplified web-based PowerPoint style tool which can be used to quickly make and share decks. This solution offers a great tool for collaborating with co-founders and advisors, as well as easier sharing via email or directly online.
3. Prezi as the most innovative of the best presentation software companies in 2018.
4. Keynote is designed for creating slides, but it comes with the key advantages of visually stunning templates and a simple, clear interface.

Q: Explain firewall.

A firewall is software used to maintain the security of a private network. Firewalls block unauthorized access to or from private networks and are often employed to prevent unauthorized Web users or illicit software from gaining access to private networks connected to the Internet. A firewall may be implemented using hardware, software, or a combination of both.

Q: Define Wide Area Network and its characteristics.

A wide area network (WAN) is a network that exists over a large-scale geographical area. A WAN connects different smaller networks, including local area networks (LANs) and metro area networks (MANs). This ensures that computers and users in one location can communicate with computers and users in other locations. WAN implementation can be done either with the help of the public transmission system or a private network.

The major features of WANs are listed below：

- Multiple computers are connected together
- It connect devices that are separated by a broader geographical area than a LAN
- A WAN usually interconnects multiple LANs

- Communication links between computers are provided by telephone networks, public data networks, satellites etc.
- Links are of low capacity (that is low data rate)
- Bit error rate is higher (1 in 100,000) compared to that for a LAN.
- The data rates of WAN is low as compare to data transfer rate of local area network , and the signal propagation delay is much greater than the local area network. The typical data rates for WAN are 56kbps to 155Mbps, 622Mbps, 2.4 Gbps or higher speed WAN.

Q: Explain the importance of audio visual aids breifly.

Importance of Audio Visual Aids

The importance of audio visual aids is evident when it comes time to teach a new or abstract concept that may be difficult to picture or grasp. Audiovisual aids allow teachers to demonstrate things to students that, otherwise, may not be clearly conveyed. When you lecture to students on a new subject -- like ringtail lemurs' mating habits -- you are limited to verbal descriptions. However, when you can demonstrate something through sight and sound, students pick up more information through the audiovisual experience. For instance, a film clip on ringtail lemurs' mating habits gives students an academic experience they could not obtain from a lecture or a textbook.

1. **Reaching Specific Learners**

Students have different learning methods. Howard Gardner of Harvard University -- who advanced the multiple intelligences theory, which suggests individuals learn things differently -- identified seven learning styles: visual-spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, linguistic and logical. While some students may learn more effectively through hands-on activities, others may learn through musical or visual responses. The importance of AV aids can be seen when classroom audiovisual tools allow musical learners to learn information in a way that stimulates their preferred learning style. Similarly, the importance of charts in the teaching and learning process is clear when introducing concepts to visual learners and students who are more quantitative than verbal.

2. **Spicing Up the Curriculum**

Experienced teachers have observed first hand the importance of AV aids in keeping students focused on the lesson. Audiovisual aids in the classroom add diversity to an instructor's teaching method. Whether you teach a group of preschoolers or college students, incorporating audiovisual aids into your lessons helps you keep students' attention. On the contrary, too much of one type of teaching method, whether it's lecturing or discussion, can grow dull and cause students to lose interest in the material. Retention of information typically is greater when audiovisual aids complement or present information.

Remembering the importance of charts in the teaching and learning process will create an active learning environment.

3. Promoting Clear Communication

By using audiovisual tools in the classroom, teachers show students how to communicate through various media. Students are introduced to the concept of conveying information creatively -- which comes in handy when they must give presentations in class or later in their careers. Exposure to audiovisual aids in school teaches kids how to communicate through sight and sound, and to tie the things they see and hear together to understand an important message.

Q: How do the exposure and use of ICT in school affects future employment?

Technology is rapidly changing the job market. Will your dream job still be around in ten years' time? What skills are employers currently on the hunt for? Technology. Whether you find that you embrace every new update, or struggle to keep up with the changes, it's effect on our day-to-day lives is unmistakable. Recent technological developments are vastly changing the way we live, and in particular, the way we work. With the job market a competitive and ever-evolving arena, determining your career path is more than just following your passions and skills, it's about being adaptive in this digital age and understanding what skills and jobs are in high demand, and which are facing potential extinction. It's important to try not feel disorientated or uncomfortable with these rapid changes, but instead, change your mindset and embrace the opportunities technology brings, through focusing on the right skills to increase your employability and succeed in the new tech-savvy work scene.

Q: what is browser?

A browser is an application program that provides a way to look at and interact with all the information on the World Wide Web. The word "browser" seems to have originated prior to the Web as a generic term for user interfaces that let you browse (navigate through and read) text files online.

Q: what is Bluetooth?

Bluetooth is an open wireless technology standard for transmitting fixed and mobile electronic device data over short distances. Bluetooth was introduced in 1994 as a wireless substitute for RS-232 cables. Bluetooth communicates with a variety of electronic devices and creates personal networks operating within the unlicensed 2.4 GHz band. Operating range is based on device class. A variety of digital devices use Bluetooth, including MP3 players, mobile and peripheral devices and personal computers.

Q: what is sound card?

A sound card is an expansion component used in computers to receive and send audio. Sound cards are configured and utilized with the help of a software application and a device driver. The input device attached to receive audio data is usually a microphone, while the device used to output audio data is generally speakers or headphones.

Q: What is software?

Software, in its most general sense, is a set of instructions or programs instructing a computer to do specific tasks. Software is a generic term used to describe computer programs. Scripts, applications, programs and a set of instructions are all terms often used to describe software.

Q: What is download accelerator?

A download manager is software tool that manages the downloading of files from the Internet, which may be built into a Web browser, or a usually more sophisticated stand-alone manager.

Q: What is Trojan Horses?

A Trojan horse is a program that appears harmless, but is, in fact, malicious. Unexpected changes to computer settings and unusual activity, even when the computer should be idle, are strong indications that a Trojan is residing on a computer. A Trojan horse may also be referred to as a Trojan horse virus, but that is technically incorrect.

Q: Define google

Google is an Internet search engine. It uses a proprietary algorithm that's designed to retrieve and order search results to provide the most relevant and dependable sources of data possible. Google's stated mission is to "organize the world's information and make it universally accessible and useful." It is the No.1 search engine in the world, a position that has generated criticism and concern about the power it has to influence the flow of information on the Web.

Q: **Define internet?**

The internet is a globally connected network system that uses TCP/IP to transmit data via various types of media. The internet is a network of global exchanges – including private, public, business, academic and government networks – connected by guided, wireless and fiber-optic technologies. The terms internet and World Wide Web are often used interchangeably, but they are not exactly the same thing; the internet refers to the global communication system, including hardware and infrastructure, while the web is one of the services communicated over the internet.

Q: What is dialogue box?

A dialog box is a user interface element, a type of window that is used to enable communication and interaction between a user and a software program. The dialog box appears when the program either needs to give the user information in an urgent manner that involves interruption, such as when an error occurs, or if the program requires immediate input or decision from the user, such as when the program closes and needs to know if the changes made have to be saved or not.

Q: What is folder?

A folder is the virtual location for applications, documents, data or other sub-folders. Folders help in storing and organizing files and data in the computer. The term is most commonly used with graphical user interface operating systems.

Q: What is Baud?

Baud (Bd) is a data transmission unit that shows how many signaling elements or symbol changes (electronic state change) are sent per second in a line code or a digitally modulated signal. It is not the measure of data transfer speed, but the measure of modulation. This should not be confused with the actual gross data transfer rate, which is expressed in bits per second. Although the two are related, they are not equal.

Q: What is an IP Address?

An Internet Protocol address (IP address) is a logical numeric address that is assigned to every single computer, printer, switch, router or any other device that is part of a TCP/IP-based network.

The IP address is the core component on which the networking architecture is built; no network exists without it. An IP address is a logical address that is used to uniquely identify every node in the network. Because IP addresses are logical, they can change. They are similar to addresses in a town or city because the IP address gives the network node an address so that it can communicate with other nodes or networks, just like mail is sent to friends and relatives.

The numerals in an IP address are divided into 2 parts:

- The network part specifies which networks this address belongs to and
- The host part further pinpoints the exact location.

Q: What is Decompression?

Decompression is the process of restoring compressed data to its original form. Data decompression is required in almost all cases of compressed data, including lossy and lossless compression. Similar to compression of data, decompression of data is also based on different algorithms. Decompression is considered important, as compressed data needs

to be restored back to standard state for usage. Decompression is widely used in data communications, multimedia, audio, video and file transmissions. Decompression is also known as uncompression.

Q: Describe the three benefits of the E-learning for the teachers and the institutions?

In this context, e-learning is a channel and tool through which teachers can improve their teaching styles; here are some of its key benefits:

- **connecting** – e-learning platforms allow teachers to stay connected to their students outside of school hours in order to exchange resources, videos, ideas, methodologies, and pedagogical practices
- **flexibility** – as e-learning combines a huge variety of different resources such as videos texts, presentations, and quizzes, it gives teachers the opportunity to adapt their teaching methods to the learning styles of their students
- **innovation**– the use of new technologies gives teachers the freedom to experiment in their teaching practice and the ability to make changes if something doesn't work
- **Accessibility** – as online platforms are available 24/7, they allow teachers to develop and create their materials whenever they want to and according to their schedules. It is also important to note that all teaching materials can be reviewed as many times as needed
- **passion-based learning** – online platforms allow teachers to support their students outside the classroom where they don't have much time together, and to give them additional instructions on subjects like arts, singing, chess, and cooking. It gives teachers the opportunity to lead students to success both during and after school hours
- **Efficiency –** e-learning allows teachers to receive constant feedback from their students about whether they understand the material, if it is interesting to them, etc. Online platforms provide a large variety of assessment tools. .
- **Save time** -time is one of the most precious commodities for educators. By eliminating the need to commute to school or university during evenings and weekends, educators can spend more time on learning concepts.
- **greener and cost-effective** – teachers do not have to pay for classroom rentals, travel fees, or printing costs since e-learning activities take place online . Paper consumption is also significantly reduced because all of the information is in an electronic format.
- **Creativity** – on a daily basis, teachers are challenged to become more versatile and creative in order to attract the attention of their students. Using a variety of online resources for an online training provokes and develops the creative thinking processes of educators.
- **Lifelong learning** – e-learning platforms are one of the channels that educators can use to deepen their knowledge and increase their skills.
- Building a community – online platforms allow educators to stay connected with colleagues from all over the world, as well as to share ideas and gain inspiration.
- **Self-reflection** – teachers can make audio and video recordings of their lessons and then watch, analyze, and reflect on the recordings afterwards.

- **Observation** – observing other educators in your school or via different online courses can be very enlightening. It helps teachers compare different teaching styles, practices, etc., as well as become more aware of what kind of teachers they are.
- **Feedback** – e-learning platforms are a good opportunity for teachers to receive feedback on their teaching style from their students and colleagues in order to see where they can tweak their habits and make improvements.

Q: Benefits of ELearning for student

1. Online Learning Accommodates Everyone's Needs
2. Lectures Can Be Taken Any Number Of Times
3. Offers Access To Updated Content
4. Quick Delivery Of Lessons
5. ELearning helps in creating and communicating new training, policies, concepts, and ideas. Whether it is for formal education or entertainment, eLearning is very quick way of learning.
6. ELearning enables educators to get a higher degree of coverage to communicate the message in a consistent way for their target audience. This ensures that all learners receive the same type of training with this learning mode.
7. ELearning is cost effective as compared to traditional forms of learning. The reason for this price reduction is because learning through this mode happens quickly and easily. A lot of training time is reduced with respect to trainers, travel, course materials, and accommodation.

Q: Define the meaning of the teaching, and definitions of the teaching and the functions of the teaching?

Meaning of Teaching

The job or profession of a teacher. Something that is taught: the ideas and beliefs that are taught by a person, religion, etc.

Definition of Teaching

According to Gage, "Teaching is a form of interpersonal influence aimed at changing the behavior potential of another person."

Edmund Amidon defined it as-" Teaching is an interactive process, primarily involving class room talk which takes place between teacher and pupil and occurs during certain definable activity."

CONCEPT OF TEACHING:

Teaching is process which usually takes place in the class room situations. It is more of formal processes. In the class room situations we see that the teacher has something in his mind and he wants to convey it to the students. For this purpose, he takes the help of teaching. He makes all efforts to make the students understand it. His teaching is successful if the students are able to grasp it fully.

NEED OF TEACHING:

Through teaching, the teacher aims at

i. Giving some knowledge to the students;
ii. Passing some information to them;
iii. Making the students acquire some skill;
iv. Changing the attitude of the learners;
v. Modifying the behavior of the students;
vi. Giving some experiences of life; etc.,

DEFINITIONS OF TEACHING:

i. ***According to Rabindra Nath Tagore***, "A Teacher can never truly teach unless he is still learning himself. A lamp can never light another lamp unless it continues to burn its own flame."
ii. ***H.C. Morrison (1934):*** "teaching is an intimate contact between a more mature personality and less mature one which is designed to further the education of the latter."
iii. ***N. L, Gage(1962)***: "Teaching is a form of interpersonal influence aimed at changing the behavior potential of another person"
iv. ***B.D. Smith (1961):*** "Teaching is a system of actions intended to induce learning."
v. ***John Dewey:*** "One might as well say he has sold when no one has bought, as to say he has taught when no one has learned."

Functions of Teaching:

In teaching process, the active or functional part is played by the independent and dependent variable. Mainly following three types of functions are performed by these variables:

I. Diagnostic functions
II. Prescriptive functions
III. Evaluative functions

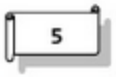
I. Diagnostic functions:

The goal is to bring desirable changes in the behavior of students. The initial task needs a proper diagnosis for the prescription of appropriate treatment (the actual attempts) for bringing desirable behavioral changes in the students. Accordingly, a teacher has to perform the following diagnostic functions:

1. He has to diagnose the entering behavior of the student. The initial potential of the student in terms of cognitive, cognitive and affective abilities should be properly diagnosed with the help of some diagnostic tests.
2. He has to diagnose and formulate specific educational objectives, the type and amount of behavioral changes he wants to introduce in the student in the light of the entering behavior and environmental conditions.
3. He has to analyze the content, instructional material and environmental facilities available for carrying out his task.
4. He has to diagnose his own potential and capabilities and bring desirable improvement in his own behavior for the success of his own mission.

II. Prescriptive functions:

On the basis of diagnosis, the teacher takes decision about the needed prescription for achieving the stipulated objectives. Accomplishment of objectives needs an appropriate interaction between the teacher and the student which, in turn, needs proper management of



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the intervening variables by the teacher. Accordingly, he has to perform the following functions;

1. Selecting appropriate contents and organizing them into proper sequence.
2. 2. Selecting proper teaching techniques, strategies and feedback devices in view of the individual difference among the students.
3. Seeking essential cooperation from the students for a purposeful interaction.

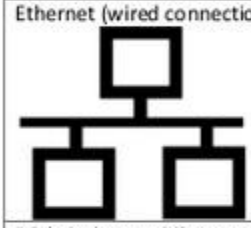
In the performance of prescriptive functions also, the teacher is likely to be more active than the students. The prescription is made for the student to bring desirable changes in his behavior. He has to work for the purposeful interaction and give his sincere cooperation for the teacher in exercising the various prescriptive functions.

III. Evaluative functions:

Evaluative function concerned with the tasks of evaluating the progress and outcomes of the prescriptive functions that may be decided in the form of realization of the stipulated objectives. The failure in the realization of the objectives is essentially a failure in the prescriptive functions either due to improper diagnosis or some serious mistakes in prescribing or carrying out the treatment (actual teaching) task.

Various evaluation devices in the form of tests, observations, interviews, rating scales, inventories and unstructured projective techniques are help in exercising evaluative functions. In contrast to diagnostic or prescriptive functions, the student remains more active in the evaluative functions. He has to respond and evaluate his own progress in terms of the abilities acquired and behavior changes occurred. He is taught and helped by the teacher in bringing improvement in his behavior on the basis of his entry behavior and potentialities. Now, it is this turn to see how far the treatment prescribe for done by the teacher is helpful for him. If the prescription suits him he can go ahead with it. If it does not, he must give his full cooperation to the teacher (just like a patient who has to consult his doctor and seek his advice for further diagnosis and subsequent prescription in order to get maximum advantage for bringing improvement in his behavior.)

Q: how many ways of networking?

Connection type	How it works
Wi-Fi (wireless connection) 	Wi-Fi stands for Wireless Local Area Network. It allows you to connect several computers at once without having Ethernet cables. Wi-Fi is a little broadband zone where radio waves are used to connect devices wirelessly; it is also referred to WLAN. The process for this works in reverse, with the computer sending information to a wireless transmitter.
Ethernet (wired connection) 	Ethernet cable is where the connection transfers to from one signal to another. It is mainly used for local area networking, to get the best connection possible. If an Ethernet cable is damaged it may affect the connection, by disconnecting or running slow.
3G (wireless mobile connection) 	3G works with radio technology within mobile phones. It uses wireless signals from transmitters in the local area. 3G can also be used to connect devices through Wi-Fi, this is called a Wi-Fi hotspot.
4G (wireless mobile connection) 	4G works the exact same way as 3G, but is much faster and is the newer generation connection. Every that is done with 3G is the same as 4G, just slower.
Bluetooth (wireless transfer connection) 	It is a wireless connection that enables you to send and receive files from other devices which are paired together. Bluetooth doesn't require an internet connection and can be used over short distances up to 300 feet. It uses a special radio frequencies that run 2.4GHz band to transmit data. It is a secure way to transfer data and can connect up to eight devices. It is secure because you will need a passcode for pairing together. Bluetooth is a very fast and reliable

Q: coprocessor?

A coprocessor is a supplementary processor unit or an entirely different circuitry that is designed to complement the central processing unit (CPU) of a computer. Its basic functionality is to offload other processor-intensive tasks from the CPU in order to achieve accelerated system performance, by allowing the CPU to focus on tasks essential to the system. There are various types of coprocessors available to perform unique tasks – from I/O interfacing or encryption, string processing, floating-point arithmetic and signal processing.

Q: what is IP?

Internet Protocol (IP) is the principal set (or communications protocol) of digital message formats and rules for exchanging messages between computers across a single network or a series of interconnected networks, using the Internet Protocol Suite (often referred to as TCP/IP). Messages are exchanged as datagrams, also known as data packets or just packets.

Q: What is virus?

Viruses are malicious programs that spread throughout computer files without user knowledge. Most widespread virus infections spread through email message attachments that activate when opened. The vicious cycle of a virus perpetuates as infected emails are forwarded to multiple users. Viruses also spread through shared media, such as Universal Serial Bus (USB) drives.

Q: How many type of graph and its uses?

A Graph is a data structure consisting of vertices and edges. The theory associated with graph is called graph theory.

Types of Graph

1. **Connected Graph:** A graph is said to be connected if there is a path between connecting every pair of nodes or vertices. A graph which is not connected can be divided into connected components call disjoint connected subgraphs.
2. **Disconnected graph:** Graphs can be connected and disconnected. This means that the graph is constructed out of two or more sub-graphs without a path between these components. You can think of a disconnected graph as for the roads of the UK and France, since they aren't connected by land.
3. **TREE Graph:** A graph is a called a tree if it is connected and contain no loop. A tree may contain a special node called the root node of the tree. The exterior nodes of the tree are called leaves of the tree.
4. **Weighted Graph:** A graph is said to be weighted graph if some real number is assigned on every edge of a graph. The weight may be some value, any variable and so on.
5. **Planar and Non-Planar Graphs**: Graph A is planar since no link is overlapping with another. Graph B is non-planar since many links are overlapping. Also, the links of graph B cannot be reconfigured in a manner
6. **Regular graph**: In graph theory, a regular graph is a graph where each vertex has the same number of neighbours; i.e. every vertex has the same degree or valency. A regular directed graph must also satisfy the stronger condition that the indegree and outdegree of each vertex are equal to each other.

Uses of Graphs

- In Computer science graphs are used to represent the flow of computation.

- Google maps uses graphs for building transportation systems, where intersection of two(or more) roads are considered to be a vertex and the road connecting two vertices is considered to be an edge, thus their navigation system is based on the algorithm to calculate the shortest path between two vertices.
- In Facebook, users are considered to be the vertices and if they are friends then there is an edge running between them. Facebook's Friend suggestion algorithm uses graph theory.
- In Operating System, we come across the Resource Allocation Graph where each process and resources are considered to be vertices. Edges are drawn from resources to the allocated process, or from requesting process to the requested resource. If this leads to any formation of a cycle then a deadlock will occur.