Question 04.

The layering of system and application software consists of three main components which are hardware, system software and application software.

DIAGRAM IS COMPULSORY HERE.

hardware
A computer basically consists of various electronic components which are supported by electrical devices and mechanical systems. All these electronic, electrical. Mechanical devices used in a computer are called the hardware of the computer.
Motherboard, CPU, floppy disk, keyboard, mouse, webcam, CS drive, USB flash drive, monitor and power supply units are examples of hardware peripheral devices connected to a digital computer. So, hardware represents the physical and tangible components of a computer. i.e. we can define hardware as the components that can be seen and touched. We can also say that the electronic, electrical and mechanical equipment that makes up a computer is called hardware.
A computer consists of five primary hardware components –

- Input devices
- Output devices
- CPU
- Storage devices
- Memory

These primary hardware parts of a computer work alongside system software to perform calculations, organize information and additionally to connect with different computers. So, the hardware components of a computer are actuated and controlled with the help of software. .

Software is the set of instructions or programs used to operate computer and execute specific task

Types of software

1. **System software** is a type of computer program designed to run computer`s hardware and application programs
   Exmples of system software
   Window
   Linux
   Search engine

Types of system software

I. **Operating system:** harnesses communication between hardware, system programs and other applications
II. **Device driver:** Enables device communication with the OS and other programs.
III. **Firmware:** Enables device control and identification.
IV. **Translator:** Translates high-level languages to low-level machine codes.
V. **Utility:** Ensures optimum functionality of devices and applications.

Features of system software

I. Provide user interface
II. Fast/high speed
III. Hard to manipulate to manipulate because it is difficult to design and understand
IV. System software is written in low-level language so that CPU and other hardware can understand it.
V. It is directly connected to hardware and enable to run

2. **Application software**. This is also called application program designed to handle specific task for a user. Examples of application software;
   Word processor application
   Spreadsheets
   Database management

Features of application software

I. Easy to design
II. Perform a single and specific task
III. Written in high level programing language
IV. Needs more storage space
V. Bigger in size

Differences between system and application software.

System software	**Application software**
System software are designed for managing system resources	Application software are designed to accomplish tasks for specific purposes
Programming of system software is complex	Programing of application software is comparatively easy
A computer can`t run without system software	A computer can easily without application software
System software do not depend on application software	Application software depend on system software and can`t run without system software

Layering of the systems and applications software

By referring from the figure above indicating a layering of systems and applications software. Hardware, system and application software are interdependent on each other. Each of them should work along to form computer produce a helpful output. The system and application software cannot be used if there is no support of any hardware device. When there is no proper instructions given, the hardware cannot be used and is useless. To get a selected job done on the pc, the relevant software package has to be loaded into the hardware. The different software package can be loaded on hardware to run totally different jobs. The software acts as an associate interface between the user and the hardware. Therefore We can say the hardware, system and application software are the heart and soul of a digital computer.

THIS IS NOT INCLUDED

Question number 05

Network is defined as the connection of at least two computer systems, either by a cable or a wireless connection.

network processing

Network processing is a software component in the cluster that handles read and write requests between client applications and the network protocols on the **cluster**. The network processing operations communicate with the data processing software component to locate the storage aggregate that will fulfill the request.

There are three basic approaches to network processing that exist in modern communication systems which are timesharing, distributed processing and client/sever computing approach. Here are explanations of timesharing as one of the approach in context to network processing.

Time-sharing is one of the approach of network processing in which multiple users gain access to resources of a particular single host computer from their individual terminals in different locations.

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