

**Subject – Introduction to Information Technology**

Q.1) Short answer type questions:

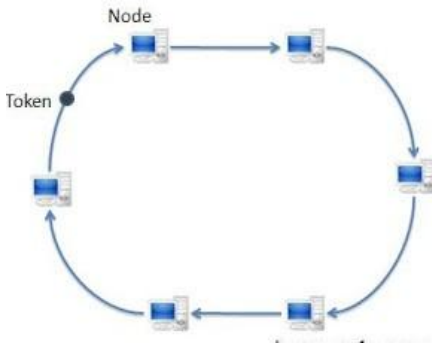
(A) DRAM: Dynamic RAM (DRAM) is the type of memory chip used for most of the main memory in a modern PC. Is dynamic—that is, its contents can be changed. With every keystroke or every mouse swipe, the contents of RAM change. And the entire contents of RAM can be wiped out by a system crash.

(B) Analog Computer: a computer that operates with numbers represented by directly measurable quantities (as voltages or rotations)- compare to Digital Computer.

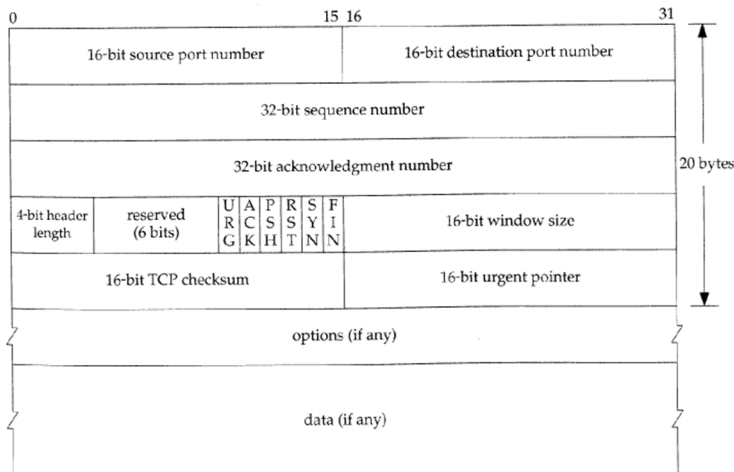
(C) Real Time OS: A **real-time operating system (RTOS)** is an **operating system (OS)** intended to serve **real time** application process.

(D) Query Language: Data Query Language is used to extract data from the database. It doesn't modify any data in the database.

(E) Ring Topology: In Ring Topology, all the nodes are connected to each-other in such a way that they make a closed loop. Each workstation is connected to two other components on either side, and it communicates with these two adjacent neighbors.



(F) TCP: Abbreviation of *Transmission Control Protocol*, and pronounced as separate letters. TCP is one of the main protocols in TCP/IP networks. Whereas the IP protocol deals only with packets, TCP enables two hosts to establish a connection and exchange streams of data. TCP guarantees delivery of data and also guarantees that packets will be delivered in the same order in which they were sent.



(G) IANA: IANA is responsible for global coordination of the Internet Protocol addressing systems, as well as the Autonomous System Numbers used for routing Internet traffic.

(H) DNS Table: A domain name server table contains lists of domain name aliases for IP addresses. They use three different types of records as shown below.

### Address records (A)

These link a domain name to an IP address.

### Mail Exchange Record (MX)

These are used to identify mail exchange servers.

### CNAME records

These allow domain names to be aliased to an IP address via a domain name already linked to an IP address.

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(I) E-Governance: Electronic governance or e-governance is the application of **information and communication technology (ICT)** for delivering **government services**, exchange of information communication transactions, integration of various stand-alone systems and services between government-to-customer (G2C), government-to-business (G2B), government-to-government (G2G) as well as **back office** processes and interactions within the entire government framework.

(J) Twisted Pair Cable: A type of cable that consists of two independently insulated copper wires twisted around one another. The use of two wires twisted together helps to reduce crosstalk and electromagnetic induction. It is cheaper than the others but not efficient.

Q.2) (a) Write the history of Computer and features of 2<sup>nd</sup> generation computer?

Answer: Please refer Chapter 1, pp 3, Compute Fundamentals, 6<sup>th</sup> edition by Pradeep K Sinha & Priti Sinha

(b) How file is organized in to hard disk physically?

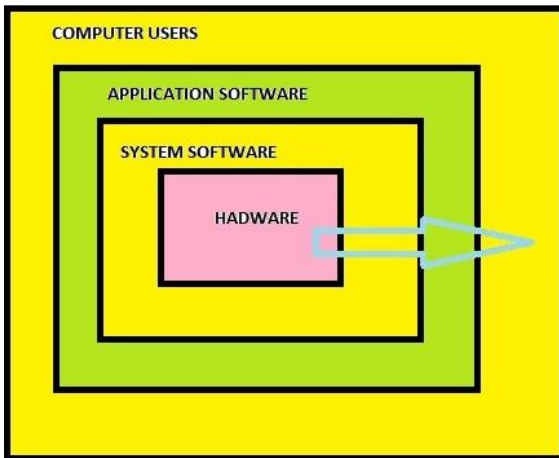
Answer: You have to explain the types of organization-

1. Sequential files
2. Direct file
3. Index sequential files

Please refer Chapter 16, pp 324, Compute Fundamentals, 6<sup>th</sup> edition by Pradeep K Sinha & Priti Sinha

Q.3) (a) what is the use of software without hardware, and how they are related to each other?

Answer: For a Computer to produce useful output its **Hardware and Software** must work together. Nothing useful can be done with the Hardware on its own, and Software cannot be utilized without supporting Hardware. To get a job done by a Computer, the corresponding Software has to be loaded in the Hardware first and then executed.



Following important points regarding the relationship between Hardware and Software are brought out by this analogy:-

1. Both Hardware and Software are necessary for a Computer to do useful job. Both are complementary to each other.
2. Same Hardware can be loaded with different Software to make a Computer perform different types of jobs just as different songs can be played using the same cassette player.
3. Except for upgrades (like increasing Main Memory and Hard Disk capacities, or adding Speakers, Modems, etc.) Hardware is normally a one- time expense, whereas Software is a continuing expense.

(b) Explain multiprogramming os, and how job is different from program?

Answer: Please refer Chapter 14, pp 275, Compute Fundamentals, 6<sup>th</sup> edition by Pradeep K Sinha & Priti Sinha

Q.4) (a) what is hand-shaking in communication process? Why it is required? And also write elements involved in this process.

Answer: Please refer “Data Communications and Networking by Behrouz A. Forouzan”

(b) Explain differences among LAN, MAN and WAN with its structure?

Answer: Please refer Chapter 17, PP 367, Compute Fundamentals, 6<sup>th</sup> edition by Pradeep K Sinha & Priti Sinha

Q.5) (a) Explain any two internet application used in internet?

Answer: You have to explain any two:

1. E-banking
2. E-commerce
3. E-learning
4. Cloud Computing
5. Encyclopedia

(b) Explain firewall, and how it is different from antivirus?

Answer: Please refer the book Network security and cryptography by William Stallings.

**Firewall:**

Also known as a 'packet filter'. Basically, software which *monitors network traffic* and *connection attempts* into and out of a network or computer and determines whether or not to allow it to pass. Depending on the sophistication, this can be limited to simple IP/port combinations or do full content-aware scans.

**Antivirus:**

A software which will find programs/ files/ software/ etc that might compromise your computer, either by being executable or by exploiting a vulnerability in the program normally supposed to process them -- Rootkits, Trojans or other types of malware.

Q.6) (a) write down the application of IT in science and engineering & medicine?

Answer: 1. Use of IT in medical education

2. Clinical informatics
3. Bioinformatics
4. Health record system

(b) What is need of GIS and where it is useful give an example ?

Answer: A **geographic information system (GIS)** is a computer system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.

Need:

1. Crime
2. History
3. Hydrology
4. Remote sensing
5. Transportation engineering

Use:

1. Cost saving from greater efficiency
2. Better decision making
3. Improved communication
4. Better record keeping.

Q.7) (a) How computer is organized, explain it with its structure?

Answer: Please refer Chapter 2, pp 18, Compute Fundamentals, 6<sup>th</sup> edition by Pradeep K Sinha & Priti Sinha

(b) Utility software is also a system software but how it is different from system software?

Answer: Systems utility are a set of instructions that help run the computer overall and allow applications to run also but application utilities are set of instructions that help run computer applications.

Examples of system utilities:

Windows 7 Home Premium ,Windows XP

application utilities:

MS Access, Ms Word, Ms Excel, etc...

You have to write features and some examples of utility softwares.

Q.8) (a) write down the application of IT in business and commerce?

Answer: 1. E-banking

2. e-business.

3. e-commerce

(b) Explain mode of communication and give any real-world example?

Answer: Please refer “Data Communications and Networking by Behrouz A. Forouzan”

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