**Pakistan School, Kingdom of Bahrain**

**SSC-I (Week 1)**

Q.1 Briefly describe the working of computer processing system?

**Ans: Working of Computer processing system**: A computer is a general-purpose programmable machine. Computer: Computer is an advanced electronic device that takes raw data as input from the user and processes it under the control of set of instructions (called program), gives the result (output), and saves it for the future use. Function of Computer: Computer has the ability to store, retrieve and process data. It processes data at very high speed according to the instructions given to it and produces accurate results. Computer program: The instructions given to a computer to perform a particular task is known as computer program.

Q.2 Highlight various stages in evolution of computers.

Ans: **Evolution of Computer**: Evolution of computers means how the computers evolved from the first mechanical device, abacus, to electromechanical and then to the modern electronic digital computers.

Q.3 What are the tasks performed by Abacus?

Ans: **Abacus:** Abacus was the earliest calculating device most probably invented in China. Abacus consisted of a wooden frame having parallel rods.These rods had a number of wooden beads which could slide freely along the length of rods. While performing calculations. beads were moved up and down with fingers.

**Tasks performed by Abacus:** Abacus was used to perform addition, subtraction, multiplication and division. It has been used in China and some other Asian countries till the end of 20th century.

**Titbits**

Abacus is still seen at some toy shops, made of plastic or wood for small children.

Q.4 What are the tasks performed by Pascaline?

Ans: **Pascaline:** Blaise Pascal, a French mathematician invented a calculating machine called Pascaline in 1642 when he was only 19 years old.

**Construction:** Pascaline used rotating wheels. Each wheel had ten parts having digits from 0 to 9. Calculations were performed by the rotation of wheels. When one wheel completes a rotation, the next wheel moves by one digit. It had a number of small slots for displaying the result.

**Tasks performed by Pascaline**: Pascaline could perform addition and subtraction on whole numbers. Slots to display Results

Q.5 Differentiate between Difference Engine and Analytical Engine.

Ans: **Difference Engine:** In 1822, the English mathematician Charles Babbage started working on a big calculating machine about the size of a room. He called it Difference Engine. Analytical Engine: Babbage worked for many years on Difference Engine but he could not complete it. Later, he came up with idea of Analytical Engine. He could not complete it because the technology was not advanced enough but he laid the foundation stone of modern digital computers. Today's modern digital computers are based on the idea of analytical engine.

**Father of modern digital computers:** Charles Babbage is known as the father of modern digital computers.

Q.6 Write a note on Hollerith desk.

Ans: **Hollerith Desk:** In 1890. Herman Hollerith built a tabulating machine called Hollerith Desk. This machine was invented to help with the census of 1890 in America.

**Construction:** Hollerith Desk consisted of a card reader which sensed the holes in the cards, a gear driven mechanism which could count and a large set of dial indicators to display the results After building Hollerith Desk, Hollerith started a company by the name of Tabulating Machine Company. Eventually this company changed its name to International Business Machines (IBM).

Q.7 What are the various tasks performed by Mark-I ?

Ans. **Mark-I:** The next (after the invention of Hollerith Desk) successful computing machine invented was a digital computer known as Mark-I. It was invented by Howard Aiken in 1944.

**Tasks performed by Mark-I:** Mark-I could add three numbers having eight digits in one second. It could print out its results on punched cards or on an electric typewriter.

**Size of Mark-I:** Mark-I was 50 feet long, B feet high and weighed about 5 tens.

**Technology used in Mark-I:** It used 3,000 electric switches.

Q.8 Justify the statement that computer evolution is a continuous process.

Ans: Since computer evolution is a continuous process, it has not stopped in the modern era. New systems are being developed to provide voice recognition and understand natural languages.

**High performance computing (HPC):** High performance computing (UPC) is being used in today data centers for fast data processing .High-performance computing (HPC) is the use of, parallel processing for running advanced application programs efficiently, reliably and fast.

**Cloud Computing:** The concept of "Cloud Computing" has been introduced. In the simplest terms, cloud computing means storing and accessing data and programs over the Internet instead of computer's hard drive.

**Current advancements:** The current advancements in computer technology are likely to transform computer into intelligent machine having thinking power. The evolution of computers will probably continue till their processing capabilities have become equal to human intelligence or even beyond that.

Q.9 List history and generations of computer.

Ans: **History and Generations of Computer**: History of computers is a chain that runs from the ancient abacus and the analytical engine of the nineteenth century, through the modern computers of present age It is generally divided into five generations. Each generation of computers is characterized by major technological developments of that time.

Q.10 Write a short note on the second generation of computer and the technology used in it. Also write down the names of model used in second generation of computers? OR Write a note on invention of transistor and second-generation of computers?

An s**: Second Generation Computers (1956 — 1963):** In 1947, three scientists, William Shockley, John Bardeen and Walter Brattain invented transistor .

**Transistor:**

Transistor functions like a vacuum tube. It replaced the vacuum tubes in the second generation computers. Transistor was faster, more reliable, smaller and much cheaper than vacuum tube.

**Characteristics/Features of second generation computers:** The following are the characteristics of second generation computers.

i. Transistors were used instead of vacuum tubes.

ii. Transistors reduced the size of computers and increased the speed and memory capacity

iii. Computers became more reliable and cheaper.

iv. Second generation computers used punch card readers, magnetic tapes, magnetic disks and printers. v. Assembly language was used in these computers.

vi. High level programming languages, FORTRAN and COBOL were introduced in this generation of computers.

**Models/examples:** Examples of second generation computers are UNIVAC II, IBM 703C, 77E0 and 7090, NCR 30C series, General Electric GE 635 and Control Data Corporation's CDC 1604 computers.