IS THE BRAIN A COMPUTER?

Prof. hussain rustam DPM

People so often compare how the brain works with that of the computer in a language suggesting the superiority of the latter. The brain contains around 100 billion neurons, and around 50 billions of them, are located in the cerebral cortex. In the nervous system, incoming and outgoing information are coded and transmitted as similar electrical signals, the action potential. The cerebral cortex is the highest centre where the information from the outside world through the special senses and from our systems is decoded, analyzed, and interpreted. The neurons of the cerebral cortex are arranged in vertical (modules) across its thickness. Each neuron is wired to an average of 10000 neurons in the same and in the neighboring modules to ensure speedy and widely spread exchange of information, and hence a prompt response. The extensive and (parallel) mode of wiring ensures that hundreds and perhaps thousands of programs are dealt with at the same time, and not in the sequential pattern of the computer, where the wiring is in (series) and jobs have to wait in a queue. There is no central processor (CPU) in the brain, and although its parts can function independently, there is close coordination between them to ensure precise responses. There is no ready made software for the brain because it manufactures and programs its own to cope with the ever-changing flow of information from our body and from the external environment. To keep the internal milieu optimal for cells to function and to deal with the information from where we live requires the processing of innumerable variables at the same time. At any moment in time, the variables of the internal milieu are different from the ones before and from the ones that will follow. The three main tasks of the nervous system of any creature are to ensure survival, safety, and reproduction to renew life and each one of these requires innumerable software. By comparison, a computer requires new software for each new task. Electronic engineers are trying to mimic the parallel modular processing of information of the brain by building artificial neural network but this in its infancy. Currently, to assemble a super computer requires the connection of hundreds or thousands of computers in parallel to mimic a fraction of the capability of the brain. The essence of computation is speed, and speed on its own, is not efficient for the processing of our thoughts, emotions, and decision-making. The brain is also quick, its action potential lasts for a few milliseconds and travel at a speed of up to 100 meters per second. The computer will remain dependent on the brain for its hardware and software, and without the latter, it is a junk of electronic circuits. There is no single example in God's creations or man's inventions where the created surpassed the creator or the invented surpassed the inventor.