



**Program: BC (CS)**

**Subject: Computer Architecture**

**Assignment Number: 01**

**Course Code: CSC-208**

**EDP Code: 101909138**

**Semester: Fall 2019**

**Q.1** Give answer to each of the following:

- A. What are the four main functions of a computer?
- B. Figure 01 shows the IBM zEnterprise EC12 Core layout. Briefly explain the function of each sub-area.
- C. Discuss the IAS operation using the flowchart in Figure 02.
- D. For each of the following examples, determine whether this is an embedded system, explaining why or why not.
  - a. Are programs that understand physics and/or hardware embedded? For example, one that uses finite-element methods to predict fluid flow over airplane wings?
  - b. Is the internal microprocessor controlling a disk drive an example of an embedded system?
  - c. I/O drivers control hardware, so does the presence of an I/O driver imply that the computer executing the driver is embedded?
  - d. Is a PDA (Personal Digital Assistant) an embedded system?
  - e. Is the microprocessor controlling a cell phone an embedded system?
  - f. Are the computers in a big phased-array radar considered embedded? These radars are 10-story buildings with one to three 100-foot diameter radiating patches on the sloped sides of the building.
  - g. Is a traditional flight management system (FMS) built into an airplane cockpit considered embedded?
  - h. Are the computers in a hardware-in-the-loop (HIL) simulator embedded?
  - i. Is the computer controlling a pacemaker in a person's chest an embedded computer?



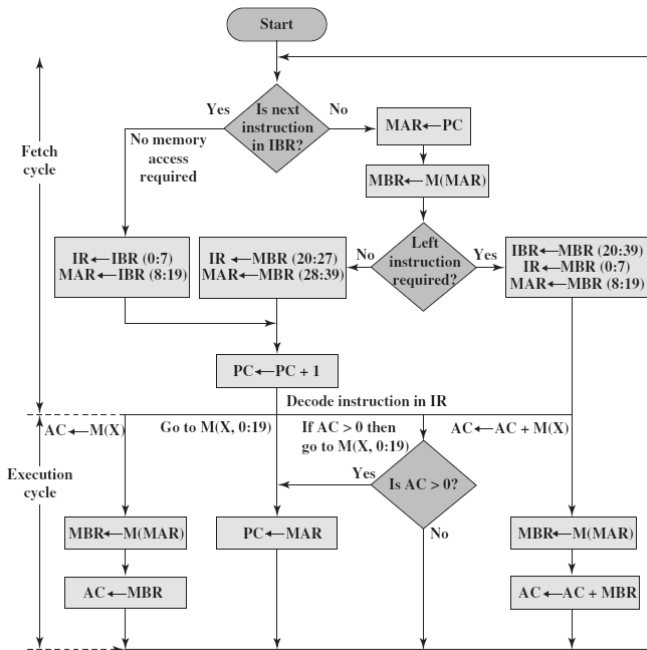


Figure 02

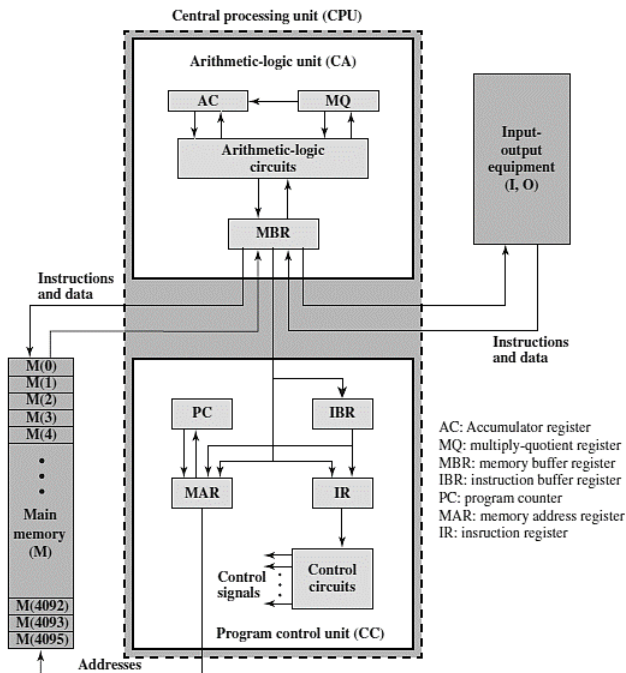


Figure 03 IAS Structure