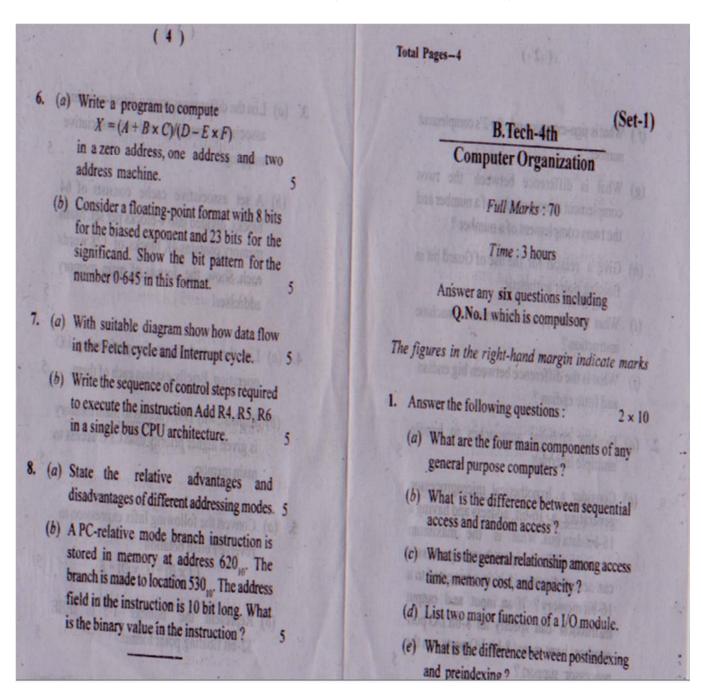
VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING & INFORMATION TECHNOLOGY

SESSION 2014-2015 (EVEN SEMESTER)



- (f) What is sign-extension rule for 2's complement number.
- (g) What is difference between the twos complement representation of a number and the twos complement of a number?
- (h) Give a reason for the use of Guard bit in floating point arithmetic.
- (i) What are the typical elements of a machine instruction?
- (j) What is the difference between big endian and little endian?
- (a) Explain different approaches to handle multiple interrupt.
 - (b) Consider a hypothetical microprocessor generating a 16-bit address and having a 16-bit data bus. What is the maximum memory address sapee that the processor can access directly if it is connected to a 16-bit memory? If an input and output instruction can specify an 8-bit I/O port number, how many 8-bit I/O ports can the processor support?

3. (a) List the differences among direct mapping, associative mapping, and set-associative mapping?

- (b) A set associative cache consists of 64 blocks, divided into 4-blocks per set. Main memory contains 4K blocks of 128 words each. Show the format of main memory addresses.
- 4. (a) List three techniques for performing I/O operation. Briefly explain each of them. 5
 - (b) Explain, why DMA access to main memory is given higher priority than CPU access to main memory.
- 5. (a) Convert the following Infix expression to reverse Polish notation:

 $(A \times B) + (C \times D) + E$ 5

(b) Represent the number -1.5 in IEEE 32-bit floating point formst.

(Turn Over)