

EKERUCHE CHINWE BRIDGET

151619021020

COMPUTER ENGINEERING

ASSIGNMENT SOLUTION

QUESTION 1

- i) ASIC - Application specific integrated circuits.
- ii) PAL - Programmable Array Logic
- iii) PLA - Programmable Logic Array
- iv) PLD - Programmable Logic Device
- v) CPLD - Complex Programmable Logic Device
- vi) FPGA - Field-Programmable Gate Array.

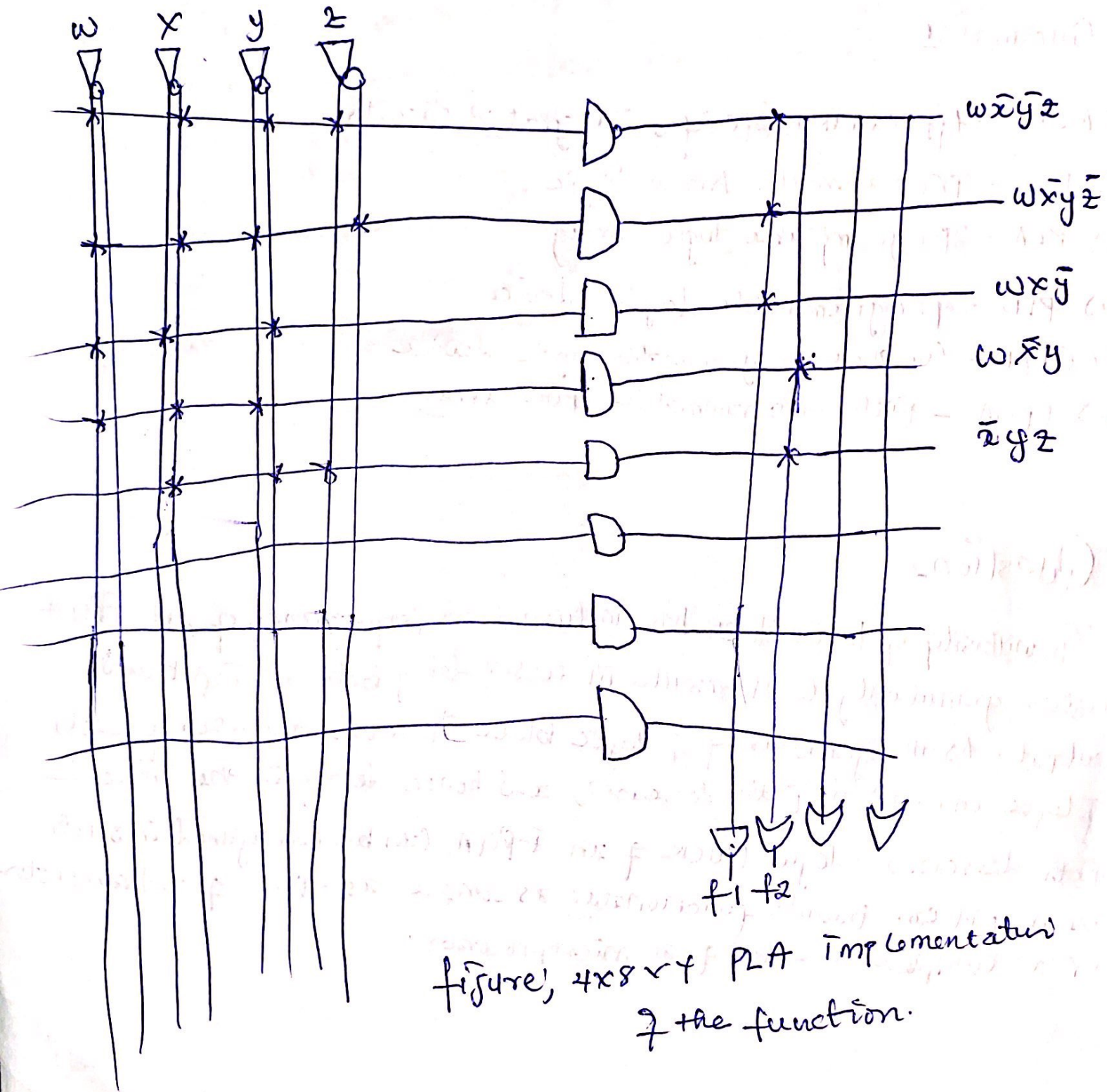
Question 2

Granularity of logic block has influence on performance of an FPGA. Higher granularity level results in lesser delay between input and output. As the granularity of logic block increases, number of levels of logic in critical path decreases, and hence delay in the critical path decreases. Logic block of an FPGA can be configured in such a way it can provide functionality as simple as that of a transistor or as complex as that of a microprocessor.

QUESTION 3

$$f_1(w, x, y, z) = w\bar{x}\bar{y}z + w\bar{x}y\bar{z} + wx\bar{y}$$

$$f_2(w, x, y, z) = w\bar{x}y + \bar{x}\bar{y}z$$



Question 4

Yes, the stored program will be nonvolatile and it will be read-only. mainly why fused programmed devices are sometimes called OTP which is an acronym for one-time programmable and by definition this memory ~~has been programmed~~, it ~~retains its~~ value upon is a special type of non-volatile memory that permits data to be written to memory once only. once the memory has been programmed, it retains its value upon loss of power. OTP memory is used in applications where reliable and repeatable reading of data is required.