

ET503M / COMPUTER1 - Computer Architecture

P. Pages : 2

**GUG/S/25/13924**

Time : Three Hours

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Diagrams and Chemical equation should be given wherever necessary.
 5. All question are compulsory.

- 1.** a) Explain in brief basic functional units of computer. 8
- b) Write short notes on- 8
- i) Assembly language ii) Queue

OR

- 2.** a) What is instruction? Explain different types of instructions. 8
- b) Convert below given arithmetic expression into an assembly language code segment using zero address, one address and two address instructions.

$$(A + B - C) * (D * E - F)$$
 8
- 3.** a) Perform multiplication using Bit pair recording method. 8
- i) $(-32) * (24)$ ii) $19 * (-12)$
- b) Explain non restoring algorithm. Also divide $12/4$ using non restoring algorithm method. 8

OR

- 4.** a) Explain floating point number format and represent the following decimal numbers in floating point format. 8
- i) $4.62 * 10^2$ ii) 500
- iii) 0.0002450 iv) $3.13 * 10^3$
- b) Explain advantages of bit-pair multiplication. 4
- c) Give double precision IEEE 754 floating point format with suitable example. 4
- 5.** a) Draw and explain the block diagram of a micro programmed control unit. 8
- b) How instruction can be pre-fetched? Explain with program counter. 8

OR

OR

OR

- 10.** a) Write short note on Data Hazards. 8
b) Write short note on pipeline performance. 8

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