5E1391

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B. Tech. V - Sem. (Main / Back) Exam., Feb.-March - 2021
ESC Electronics & Communication Engineering
5EC 3–01 Computer Architecture

Time: 2 Hours **[To be converted as per scheme]**

Max. Marks: 65

Min. Marks: 23

Instructions to Candidates:

Attempt all five questions from Part A, four questions out of six questions from Part B and one questions out of three from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL 2. NIL

PART – A

(Answer should be given up to 25 words only) **[5×2=10]**

All questions are compulsory

Q.1 Distinguish pipelining from parallelism.

Q.2 How overflow occur in Subtraction?

Q.3 Define Computers Architecture.

Q.4 Differentiate DRAM and SRAM.

Q.5 What is meant by an interleaved memory?

PART – B

(Analytical/Problem solving questions) **[4×10=40]**

Attempt any four questions

Q.1 Is there any difference between RISC & CISC computers? Explain.

Q.2 What is the advantage of pipelining? Explain instruction pipeline in detail.

Q.3 Draw and explain the diagram of a DMA controller.

Q.4 What is need of Virtual Memory in the Computer System?

Q.5 Describe the procedure for addition and subtraction for fixed point number. Explain by use of flowchart.

Q.6 Explain various instruction formats.

PART – C

(Descriptive/Analytical/Problem Solving/Design Questions) **[1×15=15]**

Attempt any one questions

Q.1 An address space is specified by 24 bits and the corresponding memory space by 16 bits –

(i) How many words are there in the address space?

(ii) How many words are there in the memory space?

(iii) If a page consists of 2K words, how many pages and block are there in the system?

Q.2 Explain the following terms with reference to Non – Von – Neumann machines.

(i) SISD

(ii) SIMD

(iii) MISD

(iv) MIMD

Q.3 What do you mean by parallel processing? Write the Flynn's classification of parallel processing.
