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6 SEM TDC CSC G 1

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(May)

COMPUTER SCIENCE

(General)

Course : 601

(Computer Organization and Architecture)

Full Marks : 48

Pass Marks : 19

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

1. Fill in the blanks/Answer the following : $1 \times 6 = 6$
 - (a) What is a bus?
 - (b) Program counter is also called _____.
 - (c) Which register can interact with the secondary storage?
 - (d) The internal components of the processor is connected by _____.

(e) _____ translates logical address into physical address.

(f) Which addressing mode directly specifies the operand value?

2. Answer the following : 2×6=12

(a) Write the differences between combinational circuit and sequential circuit.

(b) Define access time of memory.

(c) Write the disadvantages of hardwired control unit.

(d) Define 'cache hit' and 'cache miss'.

(e) Write the different addressing modes.

(f) What is the need of input-output interface?

3. Answer any *five* of the following : 6×5=30

(a) Draw the block diagram of a DMA controller and explain its function.

(b) Explain the working of various registers of 8085 microprocessor.

(c) Explain the following gates with diagrams, truth tables and Boolean expressions :

(i) OR

(ii) NAND

(iii) NOR

(d) Explain the working of R-S flip-flop.

(e) Explain the roles and significances of the following signals in 8085 microprocessor :

(i) S1 and S2

(ii) ALE

(iii) IO/M

(iv) HOLD

(v) NMI

(f) What is cache memory? Explain the working of a cache memory.

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