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[4757]-1075

S.E. (Computer Engineering) (First Semester) EXAMINATION, 2015

MICROPROCESSOR ARCHITECTURE

(2012 Pattern)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer any *four* questions, Q. No. 1 *or* Q. No. 2, Q. No. 3 *or* Q. No. 4, Q. No. 5 *or* Q. No. 6, Q. No. 7 *or* Q. No. 8.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

1. (a) Explain and draw bit pattern for flag register of 80386 DX with significance of each bit. [6]
- (b) List the features of 80386 DX microprocessor. [3]
- (c) Explain in brief instruction queue to 8086 microprocessor. [3]

Or

2. (a) Explain architecture of 8086 microprocessor with the help of neat block diagram. [6]

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- (b) Explain the purpose of pointers and index registers. [3]
 - (c) How many segment registers are used by 8086 ? Mention the use. [3]
- 3.
- (a) Differentiate between CALL and JMP. [3]
 - (b) Explain control inputs BS16# with the help of timing diagram for 16-bit data transfer. [5]
 - (c) Differentiate between direct index addressing mode and base index addressing mode. [4]
- Or*
- 4.
- (a) Explain protected mode & V86 mode. [4]
 - (b) Explain the idle and wait state machine cycle with the help of timing diagram. [5]
 - (c) Explain the following instruction with an example : [3]
 - (i) ENTER
 - (ii) LEAVE
 - (iii) BOUND
- 5.
- (a) What are the advantages of multicore designing ? [3]
 - (b) What are the advantages of cache memory ? [4]
 - (c) Explain the execution model of SIMD with neat diagram. [6]

Or

6. (a) What are the advantages of Hyperthreading technology ? [4]
(b) What are the *three* common configuration that support multi-processing ? Explain. [6]
(c) Define chip multiprocessing. [3]
7. (a) Give the features of SSE. [6]
(b) Enlist data types of 64-bit architecture. [3]
(c) Explain Hyperthreading with advantages and disadvantages. [4]

Or

8. (a) Draw and explain the block diagram of 64-bit architecture. [6]
(b) Explain virtualization technology. [4]
(c) Explain briefly the compatibility mode and 64-bit mode of IA 64 architecture. [3]