

BCA Second Semester Examination- May, 2015**Fourth PAPER****COMPUTER ARCHITECTURE**

Paper Code: 2741

Time Allowed: Three Hours**Maximum Marks : 70**

- (1) No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.
- (2) All the parts of one question should be answered at one place in the answer book. One complete question should not be answered at different places in the answer book.

(Attempt all six questions.)**Part I (Question No. 1 & 2) is compulsory & part II (Question No. 3, 4, 5 & 6) has internal choice.****PART I**

1. Attempt any 10 questions out of the following. Each question carries 1 mark.

10x1=10

(Words limit upto 20 words each)

- What is FULL-Subtractor ?
- Draw the truth table and circuit of exclusive-NOR (XNOR) Gate.
- What is Flip-Flop ? Give the names of any six types of Flip-Flops.
- What is Asynchronous or Ripple Counters ?
- What is Multiplexer ?
- What do you understand by Register Mode ?
- What is Sequential and Combinational circuits ?
- What is an Instruction Format ?
- What do you mean by RISC/CISC ?
- Give brief information about Pipelining.
- What is Virtual Memory ?
- What do you understand by Interrupts ?

2. Attempt all questions. Each question carries 5 marks.

4X5=20

(Words limit up to 50 words each)

- Differentiate between Encoder and Decoder.
- Explain NAND and NOR gates.
- What do you mean by Addressing Modes ? Explain Direct Access Mode.
- What is Direct Memory Access ? Explain DMA controller.

P.T.O.

PART II

Unit I

3. What do you understand by Combinational Circuit ? Describe Half and Full Adder ? Give both logic diagram and Truth Table ? 1

OR

- (a) Differentiate between Combinational Circuit and Sequential Logic Circuit ? 5x2=10
(b) Explain the multiplexer and Demultiplexer with an example.

Unit II

4. What is J.K Flip-Flop ? What is the advantage over the SR Flip-Flop ? 1

OR

What is a Register ? Explain Shift Registers in detail. 10

Unit III

5. What do you mean by Addressing Modes ? 1

- (i) Implied and Immediate mode
- (ii) Register and Register indirect mode
- (iii) Relative Address Mode

OR

- (i) Explain the Execution Cycle of CPU . 5x2=10
- (ii) Describe Interrupt Cycle and its need .

Unit IV

6. Write short note on:- 10

- (i) Virtual Memory
- (ii) Paging
- (iii) DMA controller
- (iv) RISC and CISC

OR

What do you mean by Cache Memory ? Also explain the mapping techniques of Cache Memory. 10
