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(Printed Pages 4)

(20517)   Roll No.......................

B.C.A. - II Sem.

18007

B.C.A. Examination, May 2017

Digital Electronics and Computer

Organisation

(BCA-204)

(New)

Time : Three Hours]   *Maximum Marks : 75*

Note : Attempt **all** the sections as per instructions.

Section-A

Note : Attempt all **five** questions. Each question carries **three** marks.

1. What is truth table? What is its significance? 3

2. What is multiplexers?   3

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3. Explain the Edge Triggered D Flip-Flops.   3

4. Why are NAND and NOR gates more popular?   3

5. Difference between Registers and Counters.   3

Section-B

Note : Attempt any **two** questions.

6. Reduce the following Boolean expression using K-Map.   7.5

    $F(P, Q, R, S) = \Sigma(0, 3, 5, 6, 7, 11, 12, 15)$

7. The 2732 is a 4096 x 8 EPROM. How many address line does it have?   7.5

8. Draw the master slave JK flip-flop and explain its working.   7.5

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Section-C

Note : Attempt any **three** questions.

9. (a) Explain the difference between cache memory and virtual memory. 7.5

   (b) Draw the Half adder Logic circuit and summarize the operation. 7.5

10. (a) State and verify De Morgan's Law in following Boolean Algebra. 7.5

    (b) Draw a Logic Circuit Diagram for the Boolean expression 7.5

    $$X : (Y'+Z)$$

11. (a) Explain the operation of the bi-directional shift register. 7.5

    (b) Explain how a J-K flip-flop can be converted into a D flip-flop. 7.5

12. Define the following : 3×5=15

    (a) Multiplexer (8×1) MUX Design

    (b) Register

    (c) Flip-Flop Application

    (d) Asynchronous Counter

    (e) Basic Cell of Static RAM

13. Write short notes on cache memory organization. 15