

Roll No. ....

U03115

**Y-2127**

**B. Sc. (Part I) EXAMINATION, 2015**

**COMPUTER SCIENCE**

**Paper First**

**(Computer Hardware)**

*Time : Three Hours ]*

*[ Maximum Marks : 50*

**Note :** Attempt all questions. All questions carry equal marks.

1. (a) Write any *five* external commands of DOS. 5  
(b) Perform the following binary operations : 5  
(i)  $1010110 \div 010$   
(ii)  $101101 \times 101$

*Or*

- (a) What do you mean by object oriented programming and procedural oriented programming language ? 5  
(b) Find the following : 5  
(i)  $(239.675)_{10} = ( )_2$   
(ii)  $(743)_8 = ( )_{16}$

2. (a) Explain how we can convert a Binary to Grey code and vice versa with the help of suitable example. 5
- (b) Draw logical diagram of the following boolean equations : 5
- (i)  $(X + Y)' \cdot Z + X' Y Z' + X Y Z$
- (ii)  $(A + C) \cdot (A' + B + C) \cdot (A' + B' + C')$

*Or*

- (a) Find the following : 5
- (i) Excess 3 code for 7435
- (ii) ASCII code for A3d9
- (b) Explain how we can use diode as switch. 5
3. (a) Simply the following using K map : 5
- $f(A, B, C, D) = \Sigma (0, 1, 2, 4, 6, 8, 9, 10, 15)$
- (b) Explain how NAND gate can be implemented with the help of RTL. 5

*Or*

- (a) What are full subtractor ? Explain its truth table and logic diagram. 5
- (b) Explain how AND gate can be implemented with the help of TTL. 5
4. (a) What are Edge triggered flip-flops ? 5
- (b) Explain how a  $4 \times 1$  Multiplexer works. 5

*Or*

- (a) Design a  $3 \times 8$  decoder with the help of two  $2 \times 4$  enabled decoders. 5

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- (b) Explain how we can implement T and D flip-flop with the help of JK flip-flop. 5
5. (a) Design of binary counter for decimal numbers. 5
- (b) What is the difference between RAM and ROM ?  
What are various types of RAM available ? 5

*Or*

- (a) What is code-7 precision time interval ? Explain. 5
- (b) What are shift registers ? 5