

**LAGOS CITY POLYTECHNIC, IKEJA**  
**SCHOOL OF ENGINEERING AND APPLIED SCIENCE**  
**SCHOOL OF ENGINEERING AND APPLIED SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE**  
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**2016/2017 SEMESTER EXAMINATION**  
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COURSE COURSE	TITLE: TITLE	INTRO. INTRO.	TO NO OF QUESTIONS	DIGITAL DIGITAL
COURSE CODE: FOR WHOM: ANSWER	COM ELECTRONICS COM ND YR I ND YR I	CS CS ANY	NO OF QUESTIONS NO OF QUESTIONS PT	6 6 FOUR

**QUESTIONS**  
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1. (a) Consider the AND gate where one of the inputs is 1. By using the truth table, investigate the possible outputs and hence simplify the expression x.1.
- (b) Consider the AND gate where one of the inputs is 0. by using the truth table, investigate the possible outputs and hence simplify the expression x.0
- (c) Briefly explain these terms; hexadecimal number system, octal number system
- AND (c) Briefly explain these terms; hexadecimal number system, octal number system
- AND BINARY NUMBER SYSTEM.  
BINARY NUMBER SYSTEM.
2. (a) Write short notes on the following:  
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 (a) Excess code  
 (b) BCD code  
 (c) Gray code  
 (d) Binary numeric code  
 (e) Alphanumeric code  
 (f) ASC11 code  
 Obtain the rules for simplifying the logical expressions  $x + 0$  which corresponds to the logic gate
- (b) X  
 (b) X  
 0  
 0
- (c) With a well label diagram describe the combinational circuits
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3. (a) Simplify the expression using De Morgans theorem  $Z = ((A + C) * (B + D))$
3. (a) Simplify the expression using De Morgans theorem  $Z = ((A + C) * (B + D))$
- (b) Using De Morgans Theorem prove  $(A*B) + (A + B) = 1$
- (b) Using De Morgans Theorem prove  $(A*B) + (A + B) = 1$
- (c) Logic gates are the basic building blocks of any digital system. With a well labels diagrams and truth tables describe all the logic six logic gates known to you
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4. (a) There are six types of Boolean laws. States the laws with appropriate examples
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- (b) (i) Convert the decimal number 250.5 to base 3 base 8 and base 16

