GATE ECE and EEE Coaching by IITians GATE CLASSES

ASSIGNMENT – Digital electronics(Number system)-1

Q 1-15 carries 1 mark each, Q 16-25 carries 2 marks each

Q1. BCD code for decimal number 874 is
(A)100001110100 (B)100011110100
(C)100011100100 (D)011101110010

Q2. 4 - bit 2's complement representation of a decimal number is 1000. The number is
(A) +8 (B) 0
(C) -7 (D) -8 (GATE-EC-2002)

Q3. Gray code for binary number 101011 is
(A)101011 (B)110101
(C)011111 (D)111110

Q4. Gray code of $(A5)_{16}$ is equivalent to
(A) 10010101 (B)11010101
(C)11011111 (D)11011011

Q5. The Octal equivalent of hexadecimal number AB.CD is
(A) 253.314 (B) 253.632
(C) 526.314 (D) 526.632

Q6. The two numbers represented in signed 2's complement form are P = 11101101 and Q = 11100110. If Q is subtracted from P, the value obtained in signed 2's complement is.

(A) 1000001111 (B) 00000111
(C) 11111001 (D) 111111001 (GATE – EC - 2015)

Q7. .X = 01110 and Y = 11001 are two 5-bit binary numbers represented in two's complement format. The sum of X and Y represented in two's complement format using 6 bits is

(A) 100111 (B) 001000
(C) 000111 (D) 101001 (GATE – EC - 2007)

Q8. Which of the following number is not allowed in radix – 7 (base 7) system.
(A)739 (B) 463
(C)142 (D)666

Q9. A new Binary Coded Pentary (BCP) number system is proposed in which every digit of a base-5 number is represented by its corresponding 3-bit binary code. For example, the base-5 number 24 will be represented by its BCP code 010100. In this numbering system, the *BCP* code 10001001101 corresponds of the following number is base-5 system

(A) 423 (B) 1324
(C) 2201 (D) 4231 (GATE-EC-2006)

Q10. Decimal equivalent of a 6 bit binary no 100101 if it is in signed magnitude representation is

(A)37 (B)26
(C)-5 (D)27

Q11. Decimal 43 in Hexadecimal and BCD number system is respectively

(A) B2, 0100 011 (B) 2B, 0100 0011
(C) 2B, 0011 0100 (D) B2, 0100 0100 (GATE-EC-2005)

Q12. The range of signed decimal numbers that can be represented by 6-bits 1's complement number is

(A) -31 to +31 (B) -63 to +63
(C) -64 to +63 (D) -32 to +31 (GATE-EC-2004)

Q13. 11001, 1001, 111001 correspond to the 2's complement representation of which one of the following sets of number

(A) 25,9, and 57 respectively (B) -6, -6, and -6 respectively
(C) -7, -7 and -7 respectively (D) -25, -9 and -57 respectively

Q14. 2's Complement representation of -17 is

(A)100001 (B)101111
(C)110011 (D)101110 (GATE-EC-2001)

Q15. Subtraction of two hexadecimal numbers $84_{16} - 2A_{16}$ result in

(A)$2B_{16}$ (B)$3A_{16}$
(C)$4B_{16}$ (D)$5A_{16}$

Q16. Convert decimal 41.6875 in octal

(A)51.54 (B)51.13
(C)54.13 (D)52.51

Q17. 73_x (in base x system) is equal to 54_y (in base y system), possible value of x and y

(A)8 and 16 (B)10 and 12
(C)9 and 13 (D)8 and 11

Q18. What is the addition of $(-64)_{10}$ and $(80)_{16}$

(A)$(-16)_{10}$ (B)$(16)_{16}$

(C)$(1100000)_2$ (D)$(0100000)_2$

Q19 In signed magnitude representation, the binary equivalent of 22.5625 is (the bit before comma represents the sign)

(A) 0, 10110.1011 (B) 0, 10110.1001

(C) 1, 10101.1001 (D) 1, 10110.1001 (IES –EC- 2002)

Q20. If $(2.3)_4 + (1.2)_4 = y_4$, then value of y in base 4 system,

(A)10.1 (B)10.01

(C)10.2 (D)1.02

Q21. The number of bytes required to represent the decimal number 1856357 in packed BCD (Binary Coded Decimal) form is __________.

Q22. Given $(135)_{basex} + (144)_{basex} = (323)_{basex}$ what is the value of basex__________.

Q23 Decimal 78 in radix -7(base7) is __________.

Q24. The result of $77_{16} - 3B_{16}$ in hexadecimal format is__________.

Q25. The number of 1 in 8-bits representation of –127 in 2's complement form is m and that in 1's complement form is n. Then the value of m/n is __________.