Shyampur Siddheswari Mahavidyalaya
B.SC. Sem1(Internal Test)- 2019
COMPUTER SCIENCE (Hons.)
CC1

Total Marks-30   Time- 1Hr.

1. Answer Any four questions.   1.5 x 4=6
(a) Find out the decimal equivalent for the binary number 11011.101?
(b) State the De Morgan's theorem?
(c) What is a digital signal? Give two examples of digital signal?
(d) Convert the decimal number 52 to binary?
(e) Convert the Gray code 1101 to binary.
(f) What is AOI logic?
(g) What is combinational circuit? Give examples.

2. Answer any four questions.   (6 x 4=24)
(a) Draw the logic diagram and write the truth table of a full-adder.

   Draw the logic diagram of a half subtractor.   2+2+2=6
(b) What is universal Gates? Describe how AOI logic is described by these

   Gates?   2+4=6

(c) How is sequential circuit different from combinational circuit?

   What is multiplexer? Draw the circuit and working of a 4:1 MUX .   1+2+3

(d) Convert the binary number 110101.101010 to octal equivalent?

   Convert the binary number010111100011 to its equivalent hexadecimal number.

   Convert decimal number 105.15 to binary .   2+2+2

(e) Realize the X-OR function using AOI logic, NAND logic and NOR logic.   2+2+2

(f) What is XS-3 code? Convert the binary 1001 to the Gray code. Explain error detecting code?

                                                                2+2+2

(h) Draw the logic diagram of a full subtractor. Write the truth table and explain it.   3+3