GOVT. V.Y.T. P.G. AUTONOMOUS COLLEGE, DURG
ASSIGNMENT QUESTION (2025)

BSC-CS-IV SEMESTER

COURSE CODE – BCS-403(L)

SUBJECT-DIGITAL ELECTRONICS AND MICROPROCESSOR(DSE)

Max Marks: 20   **Min Marks: 08**

Note: Section 'A'& 'B' containing 1 very short-answer-type questions, is compulsory. Section 'C' consists of short answer type questions and Section 'D' consists of long answer type questions.

SECTION – A   (1*2=2)

1. Explain DeMorgan's Law?

SECTION – B   (1*2=2)

1. Fill in the blanks:
   $X \bullet 1 =$ _____
   $X + 1 =$ _____
   (Where "•" and "+" are AND and OR Operation respectively)

SECTION – C   (1*6=6)

1. What is a K-Map? Reduce the function using K-Map
   y(A,B,C) = Σ (0,1,3,6,7)

   Or

   Simplify the following Boolean expression:
   (a) F = (A+B)(A'+C)(B+C).
   (b) F = A+B+C'+D(E+F).

SECTION- D   (1*10=10)

1. Define the following:
   i.   minterm
   ii.   Maxterm
   iii.   Don't care Conditions.

   Or

   Prove the following Boolean identities
   i) x + xyz + yzx' + wx + w'x + x'y = x + y
   ii) (X1 + X2) (X1' X3' + X3) (X2' + X1X3)' = X1'X2
   iii) (X+Z')(Y+Z')
   iv) (A+D)(C'+D)(A+B'+C)