Sem - I May - June
S.E. Comp. 2010
(2008 Course)

Total No. of Questions—12] [Total No. of Printed Pages—8+4

[3762]-201

S.E. (Comp/IT) (I Sem.) EXAMINATION, 2010

DISCRETE STRUCTURES

(2008 COURSE)

Time : Three Hours **Maximum Marks : 100**

N.B. :— (*i*) Attempt from Section I Q. **1** *or* Q. **2**, Q. **3** *or* Q. **4**, Q. **5** *or* Q. **6** from Section II Q. **7** *or* Q. **8**, Q. **9** *or* Q. **10**, Q. **11** *or* Q. **12**.

(*ii*) Answers to the two Sections should be written in separate answer-books.

(*iii*) Neat diagrams must be drawn wherever necessary.

(*iv*) Assume suitable data, if necessary.

SECTION I

1. (*a*) Prove by induction that for all $n >= 1$

$$1.2 + 2.3 + \ldots\ldots + n(n+1) = \frac{n(n+1)(n+2)}{3}. \quad [6]$$

(*b*) (*i*) Given that the value of $p \rightarrow q$ is false. Determine the value of $(\sim p \vee \sim q) \rightarrow q$.

(*ii*) Given that the value of $p \rightarrow q$ is true. Can you determine the value of $\sim p \vee (p \leftrightarrow q)$? [4]

P.T.O.