**Text

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| **Section A(1marks)** | | |
| 1 | | b: (1,2) |
| 2 | | C : |
| 3 | | a: |
| 4 | | d: A is false and R is true |
| **Section B ( 2 marks )** | | |
| 5 | |  |
| 6 | | 2 x1 = 2 x2 ⇒ x1 = x2 ∴ f is one-one.  f is not onto as for 1 ∈ N, there does not exist any x in N such that f (x) = 2 x = 1. |
| 7 | |  |
| **Section C ( 3 Marks )** | | |
| 8 | | Symmetrix matrix P= ½ ( A+ A’ )  *=*  Skew symmetrix matrix Q = ½ ( A-A ‘)=  A = P + Q |
| 9 | | Refexive :    Symmetric    Transitive    By adding both    R is reflexive symmetric and transitive .theerfore R is an equivalence relation |
| 10 | | R is reflexive, not symmetric and not transitive |
| 11 | | LHS = RHS Hence Proved |
| **SectionrD( 4 marks )** | | |
| 12 | Case Study (2+2)  (i)C    (ii) C | |
| 13 | For one -one  u    If f(x1)=f(x2) , then x1=x2    For Onto                    Therfore f is bijective . | |
| **SectionE( 5 marks )** | | |
| 14 | AB = 4 I  B -1= ¼ A  Given equations can be written as BX = C  X = B -1 C  X = ¼ A C  == =  Solution x= 2 y= 1, y = -1 | |