26-3-18

DOON UNIVERSITY, DEHRADUN

Mid Semester Examination, 6th Semester, 2018

Academic Year 2017-18 (Even Semester)

School of Technology

Integrated M.C.A

STM-511 Mathematics-II [Backpaper: II sem]

Time Allowed 2.00 Hours *Maximum Marks: 30*

SECTION : A

Attempt all the questions.All questions carry equal marks.(1.5+1.5+1.5+1.5)

A={1,3,5,7,8,9} B={2,4,5,6,8} U={1,2,3,4,5,6,7,8,9,10}

Q.1)Union,intersection and cross product AXB.

Q.2)Compute the Complement of A ,cardinality of (U-B) and subsets of AXB.

Q.3)Draw the Vien diagrams for A-B,B-A and U-A .

Q.4) Find the Inverce of $y=(x^2/ x^2+1)$.

SECTION : B

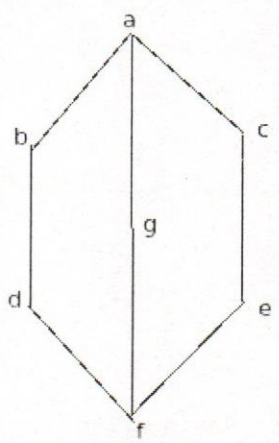
Attempt all the questions.All questions carry equal marks.(4+4+4)

Q.1)Check whether the following sets are *total ordering* or not:

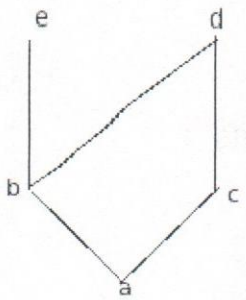
1)S={1,2,3,4,6,8,12,24} (2)

2)S={1,3,9,18,27,81} (2)

Q.2)Find the complements of "e".



Q.3) Find out the Antichains in given diagram.



SECTION : C

Attempt all the questions.All questions carry equal marks.(6+6)

Q.1) (I)R C NXN be a binary relation as defined below: (3)

R={(a,b) | b=a or b=a+1}.Is this total order?

(II)R C NXN be a binary relation as defined as (a,b)R(c,d)=>ad=bc.Is this equivalence relation?(3)

Q.2):(I)For poset P={2,4,8,16,32},Find Lower bond and Upper bond of subset{4,8} and {8,16}. (3)

(II) Draw a diagram such that L={x,a,b,c,d,e,y} is a Lattice and find out a Sublattice of L. (3)