



Sandip Foundation's
Sandip Institute Of Technology And Research Centre

Department of Computer Engineering

Unit Test-II

SUBJECT: - Discrete Mathematics

CODE: - 210241

CLASS:-S.E. Computer **Div:** - B

Academic Year: 2018-19

Max Marks: 30M

Date :

1. Answer the following questions (Any Three)

- Define the term relation. Explain the representation of relation with suitable example. (6M)
- Show that relation R is an equivalence relation. Draw the diagraph of the relation R.
Set $A=\{1,2,3,\dots,7\}$ and $R=\{(x,y) : x-y \text{ is divisible by } 3\}$ (6M)
- What is POSET? Explain concept of chain, anti-chain and Lattice with suitable example. (6M)
- Draw Hasse diagram for the following relation.
 $A = \{1,2,3,4,12\}$
 $R=\{(1,1),(2,2),(3,3),(4,4),(12,12),(1,2),(4,12),(1,3),(1,4),(1,12),(2,4),(2,12),(3,12)\}$ (6M)

2. Compulsory Questions

A. Explain following terms:

- Injective function
- Surjective function
- Bijjective function (6M)

B. Let,

$$f(x) = x + 2$$

$$g(x) = x - 2$$

$$h(x) = 3x \text{ for } x \text{ belongs to } \mathbb{R}$$

Where,

\mathbb{R} is the set of real numbers

Find: gof , fog , fof , hog , gog , foh , hof , fohog (6M)