



Tutorial – 1 (01-08-2022)

Programme	B.Tech. (All Branches)	Semester	Fall 2022-2023
Course Name	Discrete Mathematics And Graph Theory	Course Code	MAT2002
Faculty Name	Dr. Navneet Kumar Verma	Slot / Class No	A21+A22+A23
Submission date	01-08-2022	Max. Marks	10

Answer ALL the Questions

Q. No.	Question Description
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Each question is of equal marks

- Let $A \subseteq \mathbb{Z}$ and $f: A \rightarrow \mathbb{N}$ a one-to-one function. (\mathbb{Z} is set of integers; \mathbb{N} is set of natural numbers). We defined a relation R on 'A' as follows: for all $x, y \in A, (x, y) \in R$ iff and only if $f(y) = k f(x)$ for some $k \in \mathbb{N}$.
 - Prove that R is partial order relation on A .
 - Let $A = \{4, 5, 6, 7, 8, 9\}$ and suppose $f(x) = 10 - x$. Draw the Hasse diagram for the poset (A, R)
- Let $A = \{1, 2, 4, 8\}$ and let \leq be the partial order of divisibility on A . Let $A' = \{0, 1, 2, 3\}$ and let \leq' be the usual relation "less than or equal to" on integers. Show that (A, \leq) and (A', \leq') are isomorphic posets.