GU TECH, Al Ghazali University

SUBJECT: CS103 – DISCRETE STRUCUTRES QUIZ#03 (FALL 2024)

SOLUTION PAPER - A

Date: 27-01-2025	Max Marks: 02	Duration: 10 minutes
Note: Attempt question on qu	estion paper. All questions carry equa	l marks.
Roll#:	Student Signature:	
Q1. Which of these relation partial ordering that the oth a) {(0, 0), (1, 1), (2, 2), (3,		ags? Determine the properties of a
b) {(0, 0), (1, 1), (2, 0), (2, Sol.	2), (2, 3), (3, 2), (3, 3)}	

- a. partial order.
- b. not a partial order
- Q2) List the ordered pairs in the relations on {1, 2, 3, 4} corresponding to these matrices (where the rows and columns correspond to the integers listed in increasing order).

$$\begin{bmatrix} 1 & 1 & 0 & 1 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \\ 1 & 0 & 1 & 1 \end{bmatrix}$$

Sol.

Ordered pairs:

$$\{(1,1),(1,2),(1,4),(2,1),(2,3),(3,2),(3,3),(3,4),(4,1),(4,3),(4,4)\}$$

GU TECH, Al Ghazali University

SUBJECT: CS103 – DISCRETE STRUCUTRES QUIZ#03 (FALL 2024)

SOLUTION PAPER - B

Date: 27-01-2025	Max Marks: 02	Duration: 10 minutes
Note: Attempt question on qu	estion paper. All questions carry equal	l marks.
Roll#:	Student Signature:	
Q1. Which of these relation partial ordering that the oth	as on {0, 1, 2, 3} are partial orderingers lack.	gs? Determine the properties of a
a) {(0, 0), (1, 1), (1, 2), (2, b) {(0, 0), (1, 1), (1, 2), (1, Sol.	/· · · / /	
a Doutial and an		

- a. Partial order
- b. Partial order
- Q2) List the ordered pairs in the relations on {1, 2, 3, 4} corresponding to these matrices (where the rows and columns correspond to the integers listed in increasing order).

$$\begin{bmatrix} 1 & 1 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \\ 1 & 0 & 0 & 1 \end{bmatrix}$$

Sol

Ordered pairs:

$$\{(1,1),(1,2),(1,3),(2,2),(3,3),(3,4),(4,1),(4,4)\}$$

GU TECH, Al Ghazali University

SUBJECT: CS103 – DISCRETE STRUCUTRES QUIZ#3 (FALL 2024)

SOLUTION PAPER - C

Date: 27-01-2025	Max Marks: 02	Duration: 10 minutes
Note: Attempt question on que	estion paper. All questions carry equa	ıl marks.
Roll#:	Student Signature:	

- Q1. Which of these relations on {0, 1, 2, 3} are partial orderings? Determine the properties of a partial ordering that the others lack.
- **a**) {(0, 0), (1, 1), (1, 2), (1, 3), (2, 2), (2, 3), (3, 3)} **b**) {(0, 0), (0, 1), (0, 2), (1, 0), (1, 1), (1, 2), (2, 0), (2, 2), (3, 3)}
- Sol. a. Partial order
 - b. Not partial order
- Q2) List the ordered pairs in the relations on {1, 2, 3, 4} corresponding to these matrices (where the rows and columns correspond to the integers listed in increasing order).

$$\begin{bmatrix} 0 & 1 & 0 & 1 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 1 & 0 & 1 & 0 \end{bmatrix}$$

Sol.

Ordered pairs:

 $\{(1,2),(1,4),(2,1),(2,3),(3,2),(3,4),(4,1),(4,3)\}$