Unit 4 - Week 3

Course outline

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Assignment 3

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-08-21, 23:59 IST.

1) *Consider the relation R of divisibility on the set $\mathbb{Z}$ of integers. Then the relation R is* — *1 point*

- *reflexive and antisymmetric*
- *reflexive but not antisymmetric*
- *antisymmetric but not reflexive*
- *neither reflexive nor antisymmetric*

No, the answer is incorrect.
Score: 0
Accepted Answers:
reflexive but not antisymmetric

2) *Let $A = \{2, 3, 6, 8, 9, 18\}$ be ordered by divisibility. Then the non comparable pairs of elements of A are* — *1 point*

- (2, 6), (2, 8), (2, 18), (3, 6), (3, 9), (3, 18), (6, 18), (9, 18)
- (6, 2), (8, 2), (18, 2), (6, 3), (9, 3), (18, 3), (18, 6), (18, 9)
- (2, 3), (2, 9), (3, 8), (6, 8), (6, 9), (8, 9), (8, 18)
- (2, 3), (2, 6), (2, 8), (2, 9), (2, 18), (3, 6), (3, 8), (3, 9), (3, 18)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(2, 3), (2, 9), (3, 8), (6, 8), (6, 9), (8, 9), (8, 18)

3) *Let $S = \{2, 3, 4, 5, 12, 16, 24, 36, 48\}$ be ordered by divisibility. Then the immediate predecessor and immediate successor of 16 are given by* — *1 point*

- 2, 48
- 12, 24
- 4, 48
- 12, 48

No, the answer is incorrect.
Score: 0
Accepted Answers:
4, 48

4) *Let $X = \{2, 3, 6, 12, 24\}$ be ordered by divisibility. Then the number of edges in the Hasse diagram of $(X, /)$ is* — *1 point*

- 3
- 4
- 5
- 6

No, the answer is incorrect.
Score: 0
Accepted Answers:
4

5) *Let $T = \{2, 3, 4, 16\}$ be ordered by divisibility. Then the maximal and minimal elements of T are, respectively, given by* — *1 point*

- 16, 2
- 3, 16 *and* 2, 3
- 4, 16 *and* 2, 3
- 4, 16 *and* 2

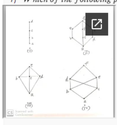
No, the answer is incorrect.
Score: 0
Accepted Answers:
3, 16 *and* 2, 3

6) *Consider the poset $A = (\{1, 2, 3, 4, 6, 9, 12, 18, 36\}, /)$. Then the greatest lower bound and the least upper bound of the set $\{4, 6, 9\}$ are* — *1 point*

- 18, 2
- 12, 3
- 9, 4
- 36, 1

No, the answer is incorrect.
Score: 0
Accepted Answers:
36, 1

7) *Which of the following posets represented by Hasse diagrams are lattices?* — *0 points*



- *only (i) and (ii)*
- *only (i), (iii) and (iv)*
- *only (i), (ii) and (iii)*
- *all (i), (ii), (iii) and (iv)*

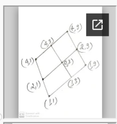
No, the answer is incorrect.
Score: 0
Accepted Answers:
only (i), (ii) and (iii)

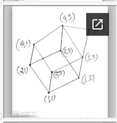
8) *Consider the sets $C = \{1, 3, 4, 12\}$ and $D = \{1, 2, 3, 9, 18\}$ ordered by divisibility. Then which of these sets is/are a lattice(s)?* — *1 point*

- *only C*
- *only D*
- *both C and D*
- *neither C nor D*

No, the answer is incorrect.
Score: 0
Accepted Answers:
only C

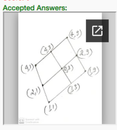
9) *Let $L_1 = \{1, 2, 4\}$, $L_2 = \{1, 3, 9\}$ be ordered by divisibility. Then the lattice $L_1 \times L_2$ is given by* — *1 point*



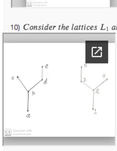


- *none of these*

No, the answer is incorrect.
Score: 0
Accepted Answers:



10) *Consider the lattices L_1 and L_2 shown below. Define a bijective function f from L_1 to L_2 so that L_1 and L_2 are isomorphic* — *1 point*



- $f = \{(a, 1), (b, 2), (c, 5), (d, 3), (e, 4)\}$
- $f = \{(a, 1), (b, 2), (c, 4), (d, 3), (e, 5)\}$
- $f = \{(a, 2), (b, 1), (c, 4), (d, 3), (e, 5)\}$
- $f = \{(a, 5), (b, 3), (c, 4), (d, 2), (e, 1)\}$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$f = \{(a, 1), (b, 2), (c, 4), (d, 3), (e, 5)\}$