Unit 5 - Week 4

Course outline

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Assignment 4

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

Due on 2019-08-28, 23:59 IST.

1) *Consider the lattice $D_{12} = \{1, 2, 3, 4, 6, 12\}$ ordered by divisibility. Then which of the following subsets of D_{12} is/are sublattice(s) of D_{12} ? (i) $S = \{1, 2, 3, 4\}$, (ii) $T = \{1, 3, 4, 12\}$* 1 point

- only S
- only T
- both S and T
- neither S nor T

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

2) *Consider the subset $S = \{2, 3, 6\}$ of the poset $(\{1, 2, 3, 4, 5, 6\}, /)$, (where x/y means x divides y). Then the upper bound and lower bounds of S are, respectively,* 1 point

- 6, 2
- 6, 1
- 6, 3
- 6 and 1, 2

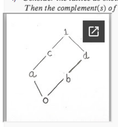
No, the answer is incorrect.
Score: 0
Accepted Answers:
6, 1

3) *Consider the lattice as shown below. Then the complement(s) of the element b is(are) :* 1 point

- a
- c
- a and c
- b

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

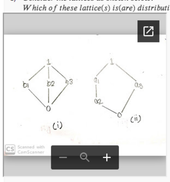
4) *Consider the lattice as shown below. Then the complement(s) of the element a is(are) :* 1 point



- b
- b and d
- d
- b, c and d

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

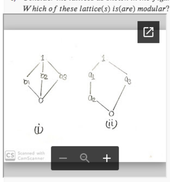
5) *Consider the lattices as shown below. Which of these lattice(s) is(are) distributive ?* 1 point



- (i)
- (ii)
- both (i) and (ii)
- neither (i) nor (ii)

No, the answer is incorrect.
Score: 0
Accepted Answers:
neither (i) nor (ii)

6) *Consider the lattices as shown in the figures below. Which of these lattice(s) is(are) modular?* 1 point



- (i)
- (ii)
- both (i) and (ii)
- neither (i) nor (ii)

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

7) *$A = \{1, 5, 7, 35\}$ be the set of positive integers and the operations $+$, $*$ and $'$ be defined on A as follows : $a + b = lcm(a, b)$ $a * b = gcd(a, b)$ $a' = \frac{35}{a}$ Then the zero element and the unit elements of the Boolean algebra $(A, +, *, ')$ are, respectively, given by* 1 point

- 0, 1
- 1, 35
- 0, 35
- 1, 0

No, the answer is incorrect.
Score: 0
Accepted Answers:
1, 35

8) *Let $a = 1101110111$ and $b = 1100110110$ in B_{10}. Then $a + b$, $a * b$ and a' are, respectively, given by* 1 point

- 1100110110, 1101110111, 0010001000
- 0010001000, 1101110111, 1100110110
- 1101110111, 1100110110, 0010001000
- 1101110111, 0010001000, 1100110110

No, the answer is incorrect.
Score: 0
Accepted Answers:
1101110111, 1100110110, 0010001000

9) *Consider the Boolean algebra $D_{30} = \{1, 2, 3, 5, 6, 10, 15, 30\}$, the divisors of 30, with the operations $+$, $*$ and $'$ defined as $a + b = l.c.m.(a, b)$, $a * b = g.c.d.(a, b)$ and $a' = \frac{30}{a}$. Then the values of $x = (30 * 15) + 6'$, $y = (3 + 6) * (10 * 15)'$ and $z = 30 * (5 + 10')$ are, respectively, given by* 1 point

- 15, 6, 30
- 5, 6, 15
- 5, 6, 30
- 15, 6, 15

No, the answer is incorrect.
Score: 0
Accepted Answers:
15, 6, 15

10) *The dual of the Boolean equation $ab(b + b'c) + a'c$ is* 1 point

- $[(a + b) + b(b' + c)](a' + c)$
- $[(a + b) + b(b' + c)] + (a' + c)$
- $[(a + b)b + (b' + c)](a' + c)$
- $[(a + b)b + (b' + c)] + (a' + c)$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$[(a + b) + b(b' + c)](a' + c)$