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LOGIKA INFORMATIKA

UTS.

JAWABAN.

1.) Bentuk logika.

A = Bowo kaya raya

B = Bowo tidak bahagia.

a. $\neg A$

b. $A \cap B$

c. ~~A~~ $A \cup \neg B$

d. $A \rightarrow B$

e. $A \leftrightarrow B$.

2.) Konstanta proposional dan logika

• P = Budi di Citarang

Q = Dewi di Citarang

Bentuk logika: $P \rightarrow Q$

• P = Pintu di rumah Wati berwarna merah

Q = Pintu di rumah Wati berwarna cokelat.

Bentuk logika: $P \cup Q$

• P = Berita ini tidak menyenangkan

Bentuk logika: $\neg P$.

• P = Dewi rajin kuliah

Q = Dewi pasti pandai

Bentuk logika: $P \rightarrow Q$

• P = Dewi rajin kuliah

Q = Dewi pasti pandai

Bentuk logika: $P \rightarrow Q$

3.) a.

| A | A | $A \cap A$ |
|---|---|------------|
| B | B | B |
| B | B | B |
| S | S | S |
| S | S | S |

b.

| A | A | $A \cup A$ |
|---|---|------------|
| B | B | S |
| B | B | S |
| S | S | B |
| S | S | B |

c.

| A | $\neg A$ | $A \cap \neg A$ |
|---|----------|-----------------|
| B | S | S |
| B | S | S |
| S | B | S |
| S | B | S |

d.

| A | B | $A \rightarrow B$ | $B \rightarrow A$ |
|---|---|-------------------|-------------------|
| B | B | B | B |
| B | S | S | B |
| S | B | B | S |
| S | S | B | B |

e.

| A | B | C | $A \rightarrow B$ | $(A \rightarrow B) \rightarrow C$ | $B \rightarrow C$ | $A \rightarrow (B \rightarrow C)$ |
|---|---|---|-------------------|-----------------------------------|-------------------|-----------------------------------|
| B | B | B | B | B | B | B |
| B | B | S | B | B | S | S |
| B | S | B | S | B | B | B |
| S | S | S | B | S | B | B |
| S | B | B | B | B | B | B |
| S | B | S | B | S | S | B |

| | | | | | | | | | | | |
|--------|---|---|------------|----|---|---|------------|----|---|----------|-----------------|
| 4.) a. | A | A | $A \cap A$ | b. | A | A | $A \cup A$ | c. | A | $\neg A$ | $A \cap \neg A$ |
| | B | B | B | | B | B | S | | B | S | S |
| | B | B | B | | B | B | S | | B | S | S |
| | S | S | S | | S | S | B | | S | B | S |
| | S | S | S | | S | S | B | | S | B | S |

| | | | | | | | | | | | | |
|----|---|---|-------------------|-------------------|----|---|---|---|-------------------|-----------------------------------|-------------------|-----------------------------------|
| d. | A | B | $A \rightarrow B$ | $B \rightarrow A$ | e. | A | B | C | $A \rightarrow B$ | $(A \rightarrow B) \rightarrow C$ | $B \rightarrow C$ | $A \rightarrow (B \rightarrow C)$ |
| | B | B | B | B | | B | B | B | B | B | B | B |
| | B | S | S | B | | B | B | S | B | B | S | S |
| | S | B | B | S | | B | S | B | S | B | B | B |
| | S | S | B | B | | S | S | S | B | S | B | B |
| | | | | | | S | B | B | B | B | B | B |
| | | | | | | S | B | S | B | S | B | B |