

RJEŠENJA A

ZADATAK 1A

1.

Formula	Istinitosna vrijednost
a) $\forall x \exists y Sxy$	I
b) $\exists x \forall y Syx$	N
c) $\forall x \forall y (\neg Sxy \vee Syx)$	I
d) $\exists x (Ux \wedge \neg \exists y (Uy \wedge Sxy))$	I
e) $\exists x \forall y ((\forall x \wedge Uy) \rightarrow Sxy)$	I
f) $\neg \exists x \neg \exists y Sxy$	I
g) $\forall x \forall y \exists z (x \neq y \rightarrow \neg (Szx \wedge Szy))$	I
h) $\forall x \forall y ((Ux \wedge Uy) \rightarrow x=y)$	N
i) $\forall x \forall y ((x \neq y \wedge ((\forall x \wedge Vy) \vee (Ux \wedge Uy))) \rightarrow \exists z \forall w ((Swx \wedge Swy) \leftrightarrow w = z))$	N

2.

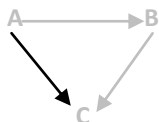
Formula	Istinitosna vrijednost
a) $\exists x \forall y Sxy$	N
b) $\exists x \neg \exists y Sxy$	N
c) $\exists x \exists y \exists z (x \neq y \wedge Szy \wedge Szx)$	N
d) $\forall x \exists y (Syx \wedge \forall z (z \neq y \rightarrow \neg Sxz))$	I
e) $\exists x \exists y \exists z (x \neq y \wedge x \neq z \wedge y \neq z \wedge Ux \wedge Uy \wedge Uz)$	I
f) $\forall x \forall y \forall z (\neg (Sxy \vee Sxz \vee Syz) \rightarrow \exists w (Swx \vee Swy \vee Swz))$	I
g) $\forall x \forall y (Sxy \rightarrow \exists z (z \neq x \wedge z \neq y \wedge (Szx \vee Szy)))$	N
h) $\forall x (\neg \forall x \rightarrow \exists y (\forall y \wedge Sxy))$	I

Ukupno 51 bod.

ZADATAK 2A

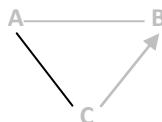
Uz svaki podzadatak naveden je maksimalan broj bodova predviđenih za taj podzadatak. Rješenja su otisnuta crno, a zadani dijelovi dijagrama sivo.

1.



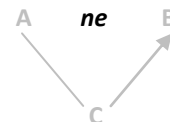
3

2.



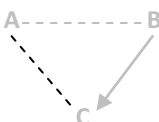
3

3.



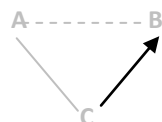
3

4.



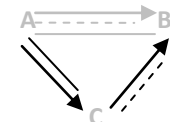
3

5.



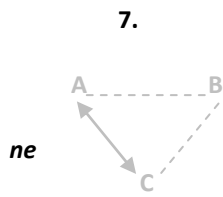
3

6.

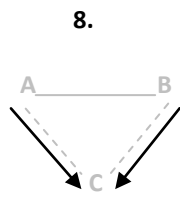


12

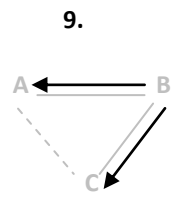
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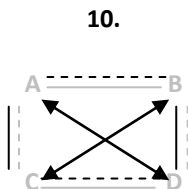
3



6



6

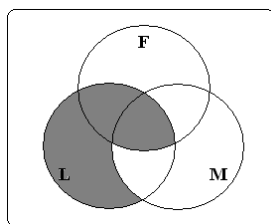


24

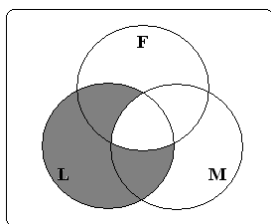
Ukupno 66 bodova.

ZADATAK 3AB

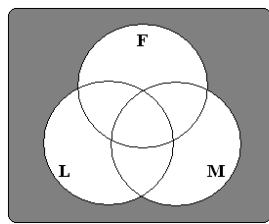
1.



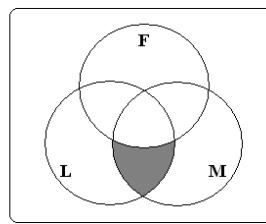
I 4 C



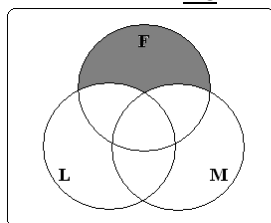
II 5 G



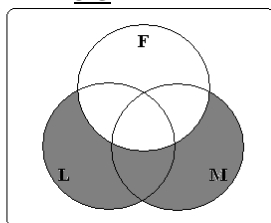
III 3 F



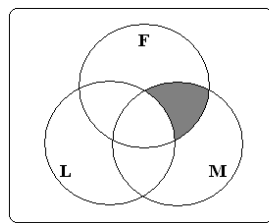
IV 7 H



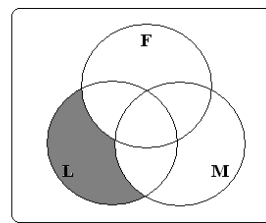
V 6 B



VI 2 D



VII 8 A



VIII 1 E

Svaka točno unesena oznaka donosi po 3 boda, pogrešno unesena 0 bodova, a izostavljena 1 bod.
Ukupno 48 bodova.

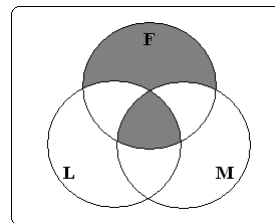
2.

Svaki **filozof** je ili **matematičar**, ili **logičar**.

* može i: Svaki **filozof** je ili **logičar**, ili **matematičar**.)

$$\neg \exists x ((Mx \leftrightarrow Lx) \wedge Fx)$$

* može i: $\forall x \neg ((Mx \leftrightarrow Lx) \wedge Fx)$



Svaki dobro riješen iskaz/dijagram donosi po 3 boda. Pogrešno ili djelomično 0 bodova, a izostavljeno rješenje po 1 bod.
Ukupno 9 bodova.

Ukupno 57 bodova.

ZADATAK 4AB

1.

	B1	B2	B3
A1	DA	NE	DA
A2	NE	DA	DA
A3	DA	DA	NE

2.

- 2.1. $\forall ba$ **B1**
2.2. $\forall bb$ **B2**
2.3. $\forall aa \wedge \neg \forall ab$ /
2.4. $\forall x(\forall ax \leftrightarrow x=a)$ **A3**
2.5. $\forall x(\forall xa \leftrightarrow x=a)$ **A2**
2.6. $\forall x(\forall xx \leftrightarrow x=a)$ **A1**
2.7. $\neg \exists x(x \neq a \wedge \forall xa)$ /
2.8. $\neg \exists x(x \neq a \wedge \forall xx)$ /
2.9. $\neg \exists x(\forall xa \leftrightarrow x \neq a)$ **A2**

*Svako se posebno rješenje boduje posebno. Točno rješenje donosi 3, izostavljeno 1, a pogrešno 0 bodova.
Ukupno 54 boda.*

ZADATAK 5AB

1. /, /, I, /. (4 x 3 boda = 12 bodova)

2. I, N, N, N. (4 x 3 boda = 12 bodova)

3. a, b, d (Ukupno 6 bodova. Rješenje se priznaje ako i samo ako su odabrani svi i samo točni odgovori).

4. I, N, N, N, I N, /. (7 x 3 boda = 21 bod)

5. d (3 boda)

Ukupno 54 boda.

ZADATAK 6AB*

* Zadatak u A i B testu razlikuje se samo u zadanim simbolima u šestome retku.

1	$(A \vee B) \rightarrow C$	p	/ dopušta se i $(B \vee A) \rightarrow C$
2	A	p	
3	$A \vee B$	2 u\vee	/ dopušta se i $B \vee A$, ali samo ako odgovara koraku 1
4	C	1,3 MP	
5	$A \wedge C$	2,4 u\wedge	/ dopušta se i $C \wedge A$ (samo u A testu)
6	$A \rightarrow (A \wedge C)$	2-5 u\rightarrow	/ dopušta se i $A \rightarrow (C \wedge A)$, ali samo ako odgovara koraku 5 (samo u A testu)

Brojke u tumačenjima koraka 4 i 5 smiju stajati i obrnuto: **3,1 MP**, odnosno, **4,2 u \wedge** . Također, poredak brojčanih i nebrojčanih sastavnica tumačenja, iako nije standardno, smije biti i obrnut, npr. **MP 3,1**.

Svaki i samo potpuno točno ispunjeni redak donosi 3 boda.

Potpuno prazan redak: 1 bod.

Pogrešno ili nepotpuno ispunjen redak: 0 bodova.

Ukupno 18 bodova.