MUAMMOLI MASALA VA TOPSHIRIQLAR:

1. *Quyidagi formulaning umumqiymatli ekanligini isbotlang:*

$$A \equiv \left(P(x) \to \overline{Q(x)}\right) \to \overline{\exists x P(x) \wedge \forall x Q(x)}$$

2. *Agar M to'plamda aniqlangan A(x) va V(x) predikatlar chin qiymatli bo'lsa, u holda ularning chinlik to'plamlari qanday shartlarni qanoatlantirishi kerak:*

1) $\forall x\left(A(x) \to B(x)\right) \wedge \exists x\left(\overline{A(x)} \wedge B(x)\right)$

2) $\overline{\exists x\left(A(x) \wedge B(x)\right)} \wedge \left(\forall\left(A(x) \to B(x)\right)\right)$

3) $\exists x\left(A(x) \wedge B(x)\right) \to \left(\forall x\left(A(x) \to B(x)\right)\right)$*?*

3. *M={1,2,3,...,20} to'plamda quyidagi predikatlar berilgan:*

A(x): «x 5 ga bo'linmaydi»

B(x): «x juft son»

C(x): «x tub son»

D(x): «x 3 ga karrali»

Quyidagi predikatlarning chinlik to'plamini toping:

1) $A(x) \wedge B(x)$ *2)* $C(x) \wedge B(x)$

3) $C(x) \wedge D(x)$ *4)* $B(x) \wedge D(x)$

5) $\overline{B}(x) \wedge D(x)$ *6)* $A(x) \wedge \overline{D}(x)$

7) $\overline{B}(x) \wedge \overline{D}(x)$ *8)* $A(x) \wedge B(x) \wedge D(x)$

9) $A(x) \vee B(x)$ *10)* $B(x) \vee C(x)$

11) $C(x) \vee D(x)$ *12)* $B(x) \vee D(x)$

13) $\overline{B}(x) \vee D(x)$ *14)* $B(x) \vee \overline{D}(x)$

15) $A(x) \vee B(x) \vee D(x)$ *16)* $C(x) \to A(x)$

17) $D(x) \to \overline{C}(x)$ *18)* $A(x) \to B(x)$

19) $(A(x) \wedge C(x)) \to \overline{D}(x)$ *20)* $(A(x) \wedge D(x)) \to \overline{C}(x)$