such that $f_2(x_1(h_1(t))) \geqslant \delta_4$ for $t \geqslant T_4 \geqslant \gamma(T_3)$. Further we proceed analogously as in the case I-1) we obtaining $x_2(t) < 0$ for large t, which contradicts $x_2(t) > 0$ for $t \geqslant t_1$.

2) Suppose that $x_1(t) > 0$, $x_2(t) < 0$ for $t \geqslant t_1$. (The proof in the case $x_1(t) < 0$, $x_2(t) > 0$ is similar). Then in view of (24), (25) from (A) we get $x_i^{(n)}(t) < 0$, $i = 1, 2$, for $t \geqslant t_2 = \gamma(t_1)$. Using Lemma, we have $x_1'(t) > 0$ and either i) $x_2'(t) < 0$, $x_2''(t) < 0$, or ii) $x_2'(t) > 0$ for $t \geqslant t_3 \geqslant t_2$. In the case i) we proceed in the same way as in the case I-2), obtaining a contradiction to the assumption $x_1(t) > 0$ for $t \geqslant t_1$. Now we consider the case ii). The component $x_2(t)$ is increasing and $\lim_{t\to\infty} x_2(t) = -b \leqslant 0$. If we suppose that $b > 0$, we proceed in the same way as in the case i) arriving at a contradiction. Therefore $b = 0$, i.e. $\lim_{t\to\infty} x_2(t) = 0$. This in view of Lemma implies $\lim_{t\to\infty} x_2^{(k)}(t) = 0$ for $k = 0, 1, \ldots, n$.

The proof of Thoerem 4 is complete. □

A c k n o w l e d g e m e n t. The authors wish to thank the refree for his helpful suggestions.

References

[1] *J. Jaroš, T. Kusano*: Oscillation theory of higher order linear functional differential equations of natural type, Hirosh. Math. J. *18* (1988), 509–531.

[2] *I. T. Kiguradze*: On the oscillation of solutions of the equation $\mathrm{d}^m u/\mathrm{d}t^m + a(t)|u|^n \times \operatorname{sgn} u = 0$, Mat. Sb. *65* (1964), 172–187. (In Russian.)

[3] *Y. Kitamura*: On nonosciallatory solutions of functional differential equations with general deviating argument, Hirosh. Math. J. *8* (1978), 49–62.

[4] *P. Marušiak*: Oscillation of solutions of nonlinear delay differential equations, Mat. Čas. *4* (1974), 371–380.

[5] *M. Švec*: Sur un probléme aux limites, Czech. Mat. J. *19* (1969), 17–26.