

The report is devoted to the investigation of questions of approximations of the differentiable functions by the linear  $\lambda$ -methods of summation of their series and integrals of Fourier, that are defined as the totality  $\Lambda = \{\lambda_\delta(\cdot)\}$  of continuous on  $[0, \infty)$  functions, depending on the real parameter  $\delta$ .

The total asymptotic expansions for exact upper bounds of approximation by Poisson integrals and biharmonic Poisson integrals on the Sobolev's classes  $W_p^r$ ,  $p = 1, \infty$ ,  $r \in \mathbb{N}$ , and on the classes of conjugate functions  $\overline{W}_p^r$ ,  $p = 1, \infty$ ,  $r \in \mathbb{N}$ , will be presented. We will also consider the solution of the Kolmogorov-Nikolskii problem on the classes of  $(\psi, \beta)$ -differentiable  $2\pi$ -periodical functions on approximation by Weierstrass integrals in metrics of spaces  $C$  and  $L$ . A similar problem will be considered for the classes of  $(\psi, \beta)$ -differentiable functions given on the real axis.