

303.714, 681.5.01

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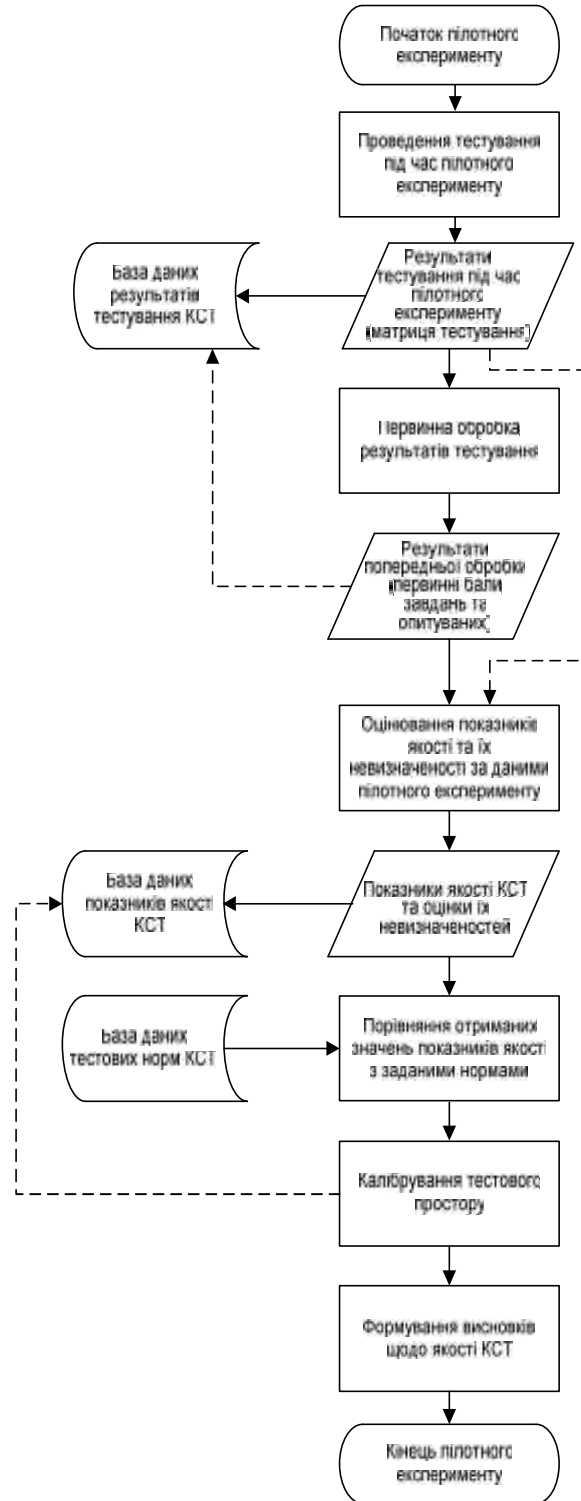
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):  $A = (a_{ij})$ ,

$$a_{ij} = \begin{cases} 1, & \text{yêù î i - èé î î èð óâáí èé} \\ & \text{î ðààèèüü î â³üü î â³âí à} \\ j - \text{â çàâüü í ý} \\ 0, & \text{yêù î i - èé î î èð óâáí èé} \\ & \text{î âî ðààèèüü î â³üü î â³âí à} \\ j - \text{â çàâüü í ý} \end{cases}$$

$n \times k$ ,

$i = \overline{1, n}$

,  $j = \overline{1, k}$

,  $n$

,  $k$

• :  
(

$$q_j = (1 - c_j) \cdot n^{-1}, \quad j = \overline{1, k}, \quad (2)$$

$$u[q_j] = \sqrt{q_j(1 - q_j) \cdot n^{-1}}, \quad j = \overline{1, k}, \quad (3)$$

$$U[q_j] = 2\sqrt{q_j(1 - q_j) \cdot n^{-1}}, \quad j = \overline{1, k}. \quad (4)$$

$$b_i, \quad i = \overline{1, n}$$

$c_j$ ,

$j = \overline{1, k}$

$$b_i = \sum_{j=1}^k a_{ij}, \quad i = \overline{1, n}$$

(1)

$$b_i, \quad i = \overline{1, n}$$

$$b_i, \quad i = \overline{1, n};$$

$$c_j = \sum_{i=1}^n a_{ij}, \quad j = \overline{1, k}.$$

$$N_j = (N_{gh})_j,$$

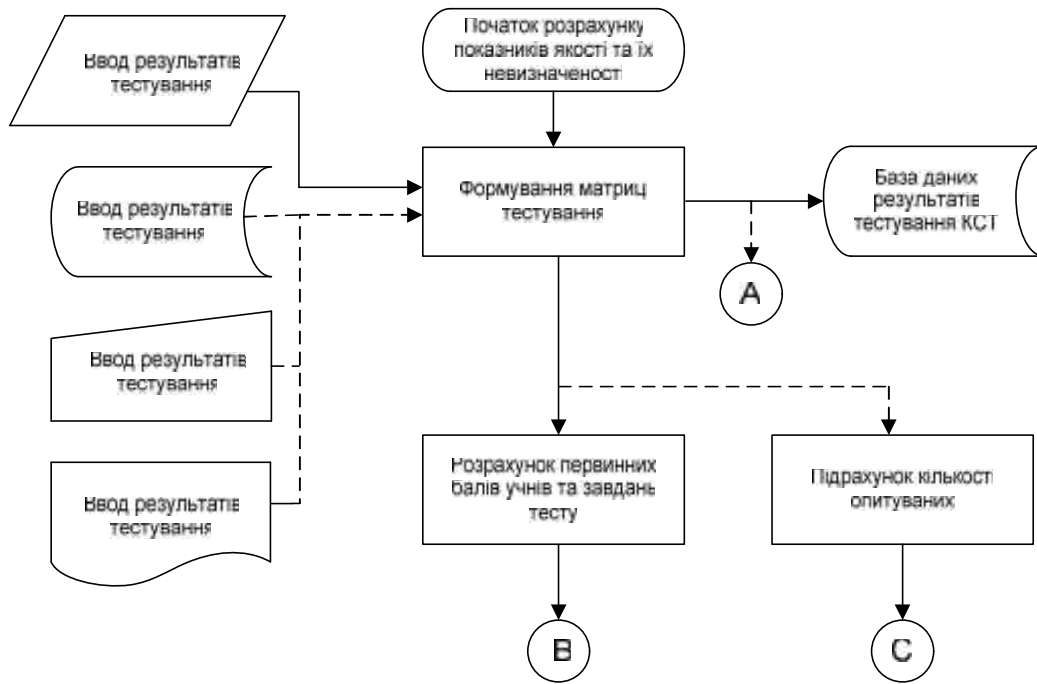
$$j = \overline{1, k}, \quad g = \overline{1, 2}, \quad h = \overline{1, 2}$$

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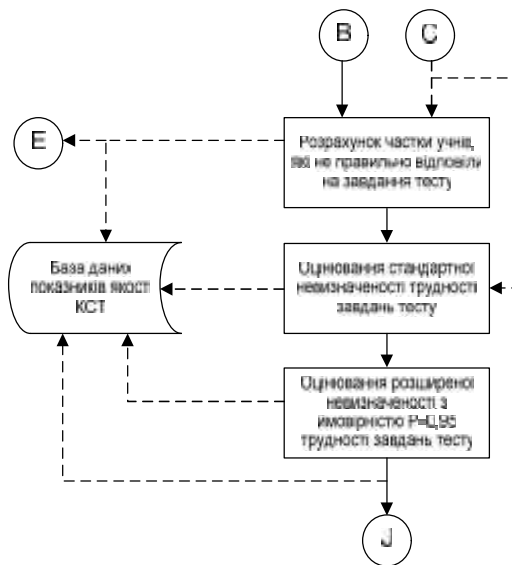
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«	»	$N_{11}$	$N_{12}$
«	»	$N_{21}$	$N_{22}$

,  $j = \overline{1, k}$  [9]:

$$D_j = \frac{N_{11,j} \cdot N_{22,j} - N_{12,j} \cdot N_{21,j}}{N_{11,j} \cdot N_{22,j} + N_{12,j} \cdot N_{21,j}} \quad (5)$$

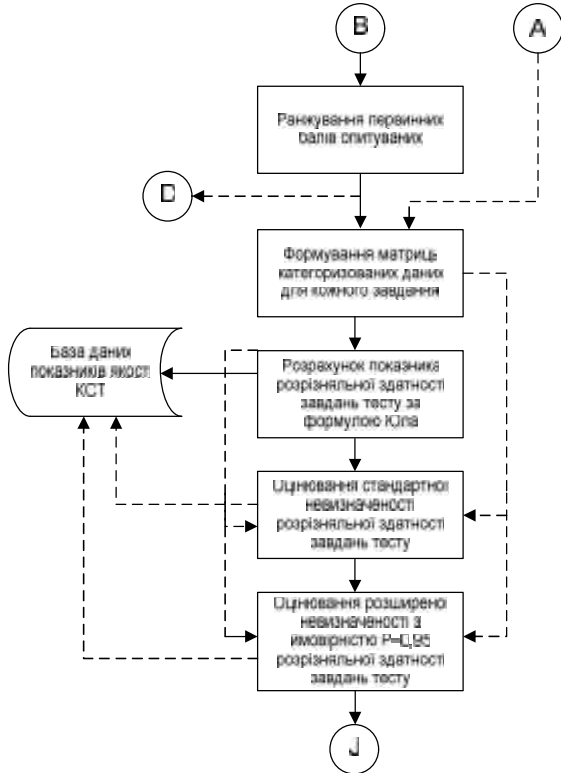
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,  $j = \overline{1, k}$ :

$$u[D_j] = 0,5(1 - D_j^2) \times \sqrt{N_{11,j}^{-1} + N_{12,j}^{-1} + N_{21,j}^{-1} + N_{22,j}^{-1}} \quad (6)$$

$\alpha = 0,95, j = \overline{1, k}$  :

$$u[D_j] = (1 - D_j^2) \times \sqrt{N_{11,j}^{-1} + N_{12,j}^{-1} + N_{21,j}^{-1} + N_{22,j}^{-1}} \quad (7)$$



4.

$$b_{Bi}, i = \overline{1, n};$$

$$b_{Hi}, i = \overline{1, n}$$

$$r_{Hi}, i = \overline{1, n}$$

$$r_{Bi}, i = \overline{1, n}$$

$$b_{Bi};$$

$$med \{r_{jl}\}_{l=1,2,\dots,n} = med \{r_{Hi}\}, i = \overline{1, n},$$

$j = \overline{1, k}$  [5, 10-11]:

$$r_{bis,j} = \frac{2 \left( med \{r_{Bi}\}_j - med \{r_{Hi}\}_j \right)}{n} \quad (8)$$

$$t = r_{bis} \sqrt{\frac{n-2}{1-r_{bis}^2}} \quad (9)$$

$$t_{\epsilon\delta} \quad f = n - 2$$

$$t > t_{\epsilon\delta} : \quad t > t_{\epsilon\delta},$$

$$P = 1 - r.$$

$$r = 0,05 [12].$$

$$(b'_{Bu,i}, b'_{B\epsilon,i}) \quad (b'_{Hu,i}, b'_{H\epsilon,i}), i = \overline{1, n} \quad (10)$$

$$0,5(n+1 - z_p \sqrt{n}), \epsilon -$$

$$0,5(n+1 + z_p \sqrt{n}), \quad z_p -$$

( $z_p = 1,96$

$$P = 0,95).$$

$$U[r_{bis,i}] = \frac{(b'_{B\epsilon,i} + b'_{H\epsilon,i}) - (b'_{Bu,i} + b'_{Hu,i})}{n} \quad (11)$$

,  $j = \overline{1, k}$ ,  $l = \overline{1, k}$  :

$$r_{jl} = \frac{p_{jl} - (1 - q_l) \cdot (1 - q_j)}{\sqrt{q_l(1 - q_l) \cdot q_j(1 - q_j)}}, \quad (12)$$

$q_j, q_l$  -  
 $j$  -  $l$  - ;  
 $p_{jl}$  -

$med_{l=1,2,..n} \{r_{jl}\}$ ,  $j = \overline{1, k}$ .

,  $j = \overline{1, k}$  :

$$r_j = \sqrt{med_{l=1,2,..n} \{r_{jl}\}}. \quad (13)$$

,  $j = \overline{1, k}$  :

$$u[r_j] = \frac{r'_{n-m} - r'_m}{1,35}. \quad (14)$$

$r'_{n-m}, r'_m$  -  
 $m = 0, 24n$ .

$j = \overline{1, k}$  :

$$U[r_j] = 1,48(r'_{n-m} - r'_m). \quad (15)$$

$r_j$ ,  $j = \overline{1, k}$  ;

$med_{j=1,2,..k} \{r_j\}$  ;

[5, 11]:

$$R_{SB} = \frac{k \cdot med_{j=1,2,..k} \{r_j\}}{1 + (k - 1) \cdot med_{j=1,2,..k} \{r_j\}}. \quad (16)$$

$$u[R_{SB}] = \frac{u[r_j] \cdot k \cdot \left(2 - med_{j=1,2,..k} \{r_j\}\right)}{\left(1 + (k - 1) \cdot med_{j=1,2,..k} \{r_j\}\right)^2}. \quad (17)$$

$$U[R_{SB}] = \frac{2u[r_j] \cdot k \cdot \left(2 - med_{j=1,2,..k} \{r_j\}\right)}{\left(1 + (k - 1) \cdot med_{j=1,2,..k} \{r_j\}\right)^2}. \quad (18)$$

$$S = \frac{b'_{n-m} - b'_m}{1,35}, \quad (19)$$

$b'_{n-m}, b'_m$  -  
 $m = 0, 25n$  ;

[11]:

$$R_{KR} = k(k - 1) \frac{S^2 - \sum_{j=1}^k q_j(1 - q_j)}{S^2}, \quad (20)$$

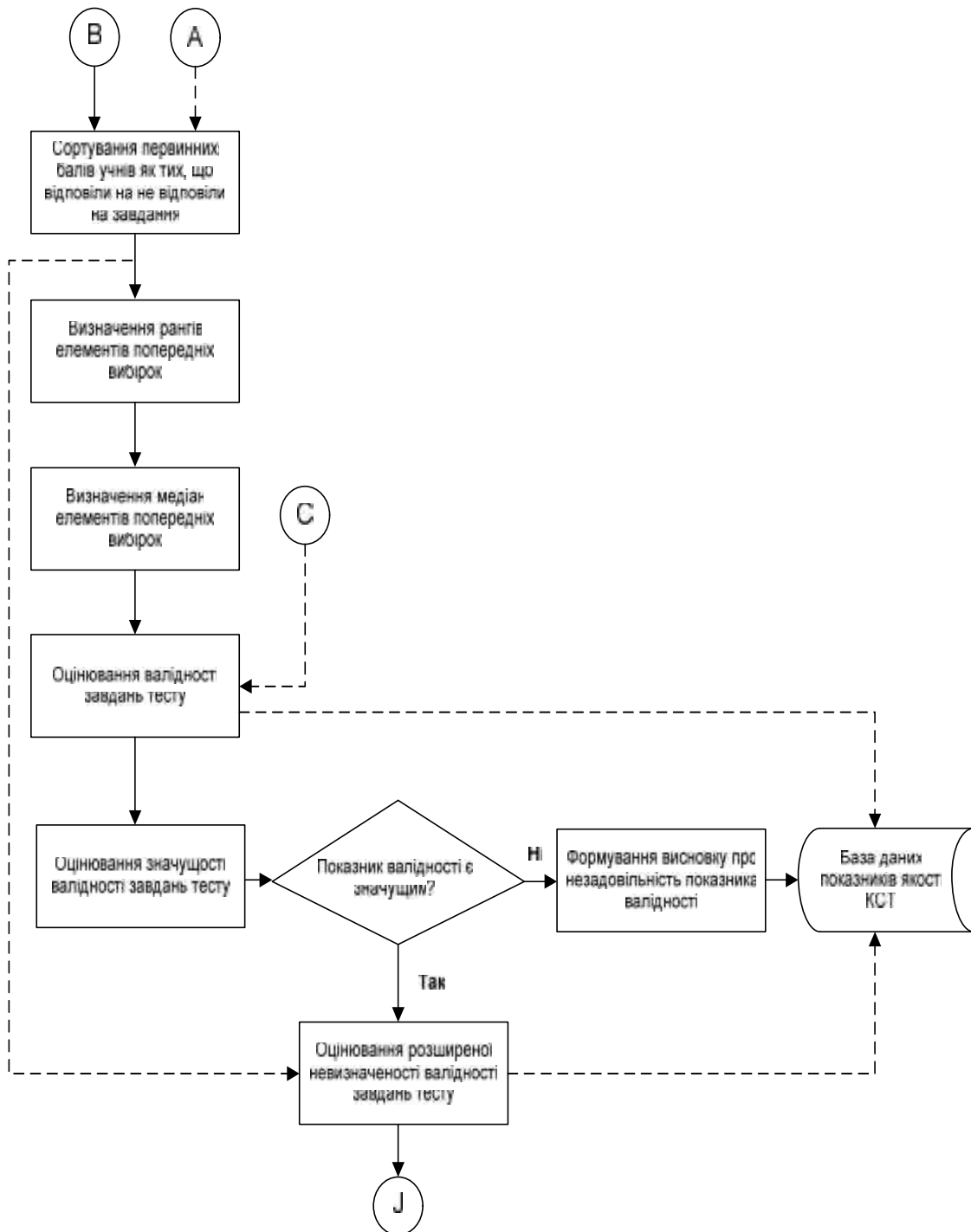
$$Z_{KR} = 0,5 \ln \frac{1 + R_{KR}}{1 - R_{KR}}. \quad (21)$$

$$\Delta_Z = \frac{Z_{\text{edd}}}{\sqrt{n - 3}}. \quad (22)$$

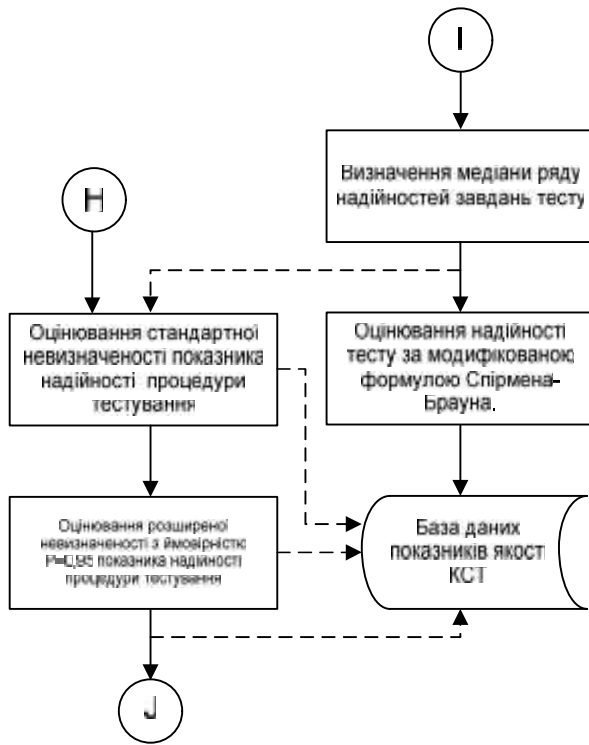
$P = 0,95$

$$U[R_{KR}] = 4R_{KR} \Delta_z e^{2Z_{KR}} \frac{\Delta_z \cdot e^{2Z_{KR}} + 1}{e^{4Z_{KR}} - 1} \quad (23)$$

$Z_{\text{дод}} -$   
(  $P = 0,95, Z_{\text{дод}} = 1,96$  ).



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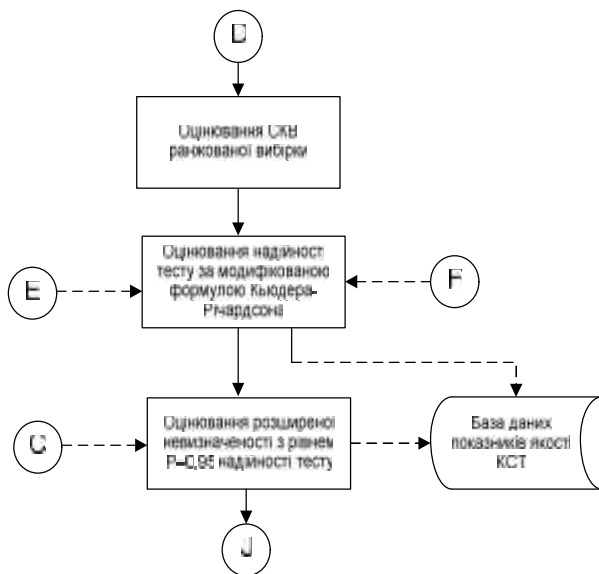
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**ASSESSMENT THE QUALITY INDICATORS OF THE TEST SPACE OF COMPUTERIZED TESTING SYSTEMS WITH SMALL CONTINGENT INTERROGATES DURING THE PILOT EXPERIMENT**

V.V. Shvedova

*The article presents the author developed information-measuring and algorithmic support for pilot experiment of computerized testing system (CTS) for synchronous test mode for the case of the small contingent of the respondents, which is characteristic of special disciplines, in particular, technical direction. In addition, for evaluating the quality of the test space CTS used metric for evaluating the reliability of the test space, reliability tasks test space (TTS), the validity of TTS, differentiating ability of TTS and difficulties TTS. Use the metric modified by the author based on the characteristics of scales, which define the output testing. Developed information-measuring and algorithmic support allows you to get advanced features with the uncertainty of the quality of the CTS before going into operation.*

**Keywords:** computerized testing system, pilot experiment, test space, reliability test space, validity of the test space assignments, difficulty of the test tasks space, differentiating ability of tasks test space, uncertainty.