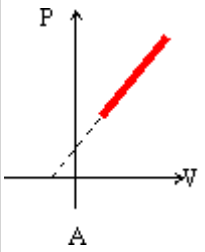
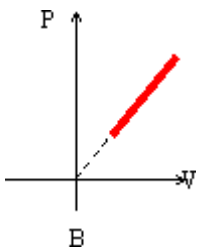
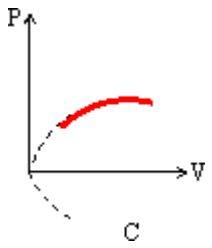
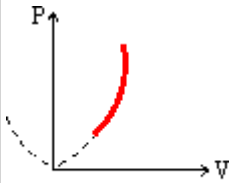
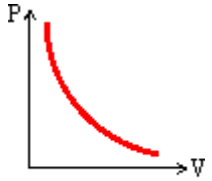
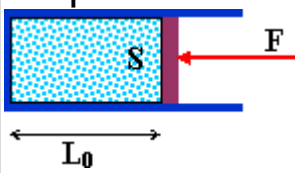
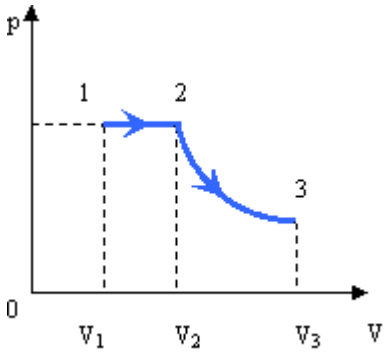
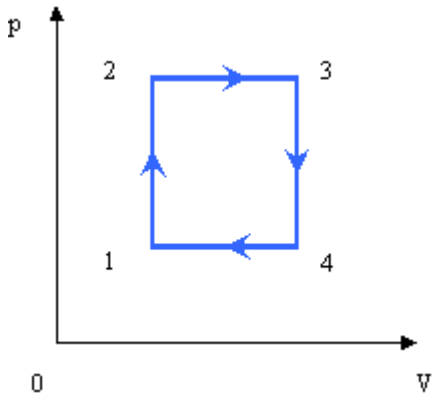
Setul 2 - Clasa a X-a

Item Response Analysis					
Question:	**Q-1**	**Q-2**	**Q-3**	**Q-4**	**Q-5**
Correct Response:	**1**	**5**	**3**	**2**	**1**
M/C #1	190	77	64	31	189
M/C #2	49	51	28	134	47
M/C #3	34	39	133	41	22
M/C #4	75	61	55	24	17
M/C #5	36	91	41	132	31
Percent Correct:	**45.6**	**21.8**	**31.9**	**32.2**	**45.4**
Discrim. Index:	**8.3 (116/14)**	**5.9 (59/10)**	**6.2 (74/12)**	**14.8 (89/6)**	**5 (110/22)**

QUIZ: Setul 2 - Clasa a X-a -- Listing of Items in Quiz with Summary Statistics		
Q-1	Intr-un cilindru cu piston se afla υ moli de gaz ideal care efectueaza o transformare a carei ecuatie este **$T = aV^2 + bV$**. In coordonate (V,P) procesul se reprezinta ca in varianta:	
190 (45.6%)	**A-1**	
49 (11.7%)	**A-2**	

34 (8.1%)	**A-3**	 C
75 (18%)	**A-4**	 D
36 (8.6%)	**A-5**	 E
Q-2		υ kilomoli de amestec gazos aflat la temperatura $\mathbf{T_1 = 300K}$ si avand $\mathbf{? = 1,5}$ se destind marindu-si de 16 ori volumul dupa legea $\mathbf{pV^{1,25} = ct.}$ **NU** este corecta afirmatia:
77 (18.5%)	**A-1**	caldura molara a gazului in acest proces este C = -2R
51 (12.2%)	**A-2**	in timpul procesului temperatura scade de doua ori
39 (9.3%)	**A-3**	? U = - 300 υR (J)
61 (14.6%)	**A-4**	lucrul mecanic efectuat in cursul procesului este L = 600 υR (J)
91 (21.8%)	**A-5**	deoarece temperatura scade, gazul cedeaza caldura.
Q-3		Intr-un recipient cilindric orizontal, cu aria sectiunii transversale S, se afla un piston masiv. Pistonul este mentinut la distanta L_0 de baza cilindrului de forta F care actioneaza perpendicular asupra sa. Dupa incetarea actiunii fortei F pistonul se deplaseaza fara

		frecare. La ce distanta de baza cilindrului viteza pistonului va fi maxima? Temperatura este constanta iar presiunea atmosferica este cea normala. 
64 (15.3%)	**A-1**	nu putem calcula deoarece nu cunoastem masa pistonului
28 (6.7%)	**A-2**	pistonul are tot timpul aceeasi viteza
133 (31.9%)	**A-3**	$L = L_0 \frac{\frac{F}{S} + p_0}{p_0}$
55 (13.2%)	**A-4**	$L = L_0 \frac{F}{S \cdot p_0}$
41 (9.8%)	**A-5**	nu putem calcula deoarece nu cunoastem nici masa de gaz nici temperatura sa
Q-4	Graficul din figura reda un proces de destindere izobara a unui gaz ideal cu **? = 5/3** de la V_1 la $V_2 = 2V_1$, urmata de o destindere izoterma pana la $V_3 = eV_2$. Raportul dintre lucrul mecanic efectuat si variatia corespunzatoare a energiei interne este: 	
31 (7.4%)	**A-1**	$\frac{L}{\Delta U_{1\to 3}} = 1$
134 (32.2%)	**A-2**	$\frac{L}{\Delta U_{1\to 3}} = 2$
41	**A-**	

(9.8%)	**3**	$\frac{L}{\Delta U_{1\to 3}} = 1{,}5$
24 (5.7%)	**A-4**	$\frac{L}{\Delta U_{1\to 3}} = 2{,}5$
132 (31.7%)	**A-5**	nici un raspuns nu este corect
Q-5	O cantitate υ de gaz ideal parcurge ciclul din figura, in care se cunosc $\mathbf{T_1}$, $\mathbf{T_3}$ iar starile 2 si 4 sunt pe aceeasi izoterma. Lucrul mecanic pentru intregul ciclu este: 	
189 (45.4%)	**A-1**	$\upsilon R\left(\sqrt{T_3}-\sqrt{T_1}\right)^2$
47 (11.2%)	**A-2**	$\upsilon R\left(\sqrt{T_3}+\sqrt{T_1}\right)^2$
22 (5.2%)	**A-3**	$\upsilon R\left(\sqrt{T_3}-2\sqrt{T_1}\right)^2$
17 (4%)	**A-4**	$\upsilon R\left(\sqrt{T_3}+2\sqrt{T_1}\right)^2$
31 (7.4%)	**A-5**	$\upsilon R\left(2\sqrt{T_3}-\sqrt{T_1}\right)^2$