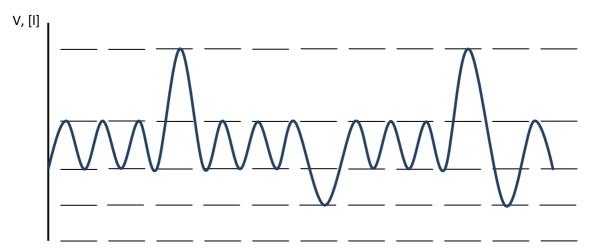# SPIROMETRY

I. Describe static volumes and capacities.

V, [l]

I. tidal volume

II. inspiratory reserve volume

III. expiratory reserve volume

IV. residual volume

V.   vital capacity

VI. inspiratory capacity

VII. expiratory capacity

VIII. total lung capacity

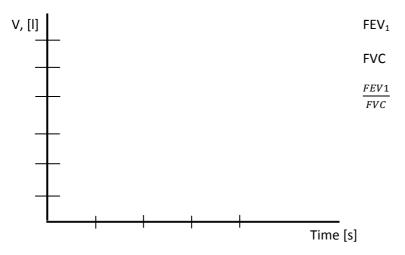| Resting breathing		unit
Frequency		(breaths/min)
tidal volume		Litre (l)
Minute Ventilation		l/min

Apneic pause in inspiration: …………………

Hyperventilation		unit
Frequency		(breaths /min)
tidal volume		Litre (l)
Maximal Minute Ventilation (MMV)		l/min

Apneic pause in expiration:…………………….

II. Dynamic lung volumes

V, [l]

Time [s]

FEV_1

FVC

$\dfrac{FEV1}{FVC}$

Conclusion _____

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_____

ELEKTRIC MODEL OF AORTAL FUNCTION

I. Schematically redraw modeled records and describe the changes

Changes in stroke volume

	SV=50ml	SV=90m
SBP		
DBP		
PP		
MABP		

BP, mmHg

Time, s

PP=pulse pressure, MABP=mean arterial blood pressure

Change in peripheral resistance

	R = 0,5–0,8 mmHg·s/ml	R = 1,2–1,5 mmHg·s/ml
SBP		
DBP		
PP		
MABP		

BP, mmHg

Time, s

Change in compliance

	C = 0,5 ml/mmHg	C = 2,0 ml/mmHg
SBP		
DBP		
PP		
MABP		

BP, mmHg

Time, s

Cardiac arrest

	SV=0ml
SBP	
DBP	
PP	
MABP	

BP, mmHg

Time, s

II. Interest tasks*:*

Model and describe the changes in blood pressure during the stay in the sauna followed by a cool down (the heat reduces peripheral resistance, the cold increases peripheral resistance).

BP,
mmHg

Time, s

Model and describe the changes in blood pressure during physical activity (gradual increase of systolic output and heart rate, and then reduction of peripheral resistance).

BP,
mmHg

Time, s

Model and describe essential hypertension (increased SV and TF by + 20%) and fully developed hypertension (return of TF and SV to the original values and increased resistance by 40%).

BP,
mmHg

Time, s

Conclusion

BLOOD FLOW IN VEINS

Draw a diagram of veins and valves. Draw the course of the veins on the volar side of the forearm and mark the location of the flaps of your experiment.

Conclusion _____

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_____

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