

Energy exchange and Thermoregulation

1. A lightly dressed man is standing in a room, air temperature is +14 C, Windows and doors are closed. In what way does he emit heat the most actively?

- A. Heat conduction
- B. Convection
- C. Evaporation
- D. *Heat radiation**
- E. Perspiration

2. The processes of heat transfer in naked person at room temperature have been studied. It was revealed that under these conditions the greatest amount of heat is transferred by:

- A. Evaporation
- B.
- C. *Heat radiation**
- D. Convection
- E. Heat conduction

3. A human body cools in water much faster than in the air. What way of heat emission in water is much more efficient?

- A. *Heat conduction**
- B..
- C. Sweat evaporation
- D. Heat radiation
- E. Convection

4. In hot weather ventilators are often used to normalize the microclimate in the heated rooms. It leads to intensified heat transfer from the human body by means of:

- A. Conduction and convection
- B. Radiation
- C. Evaporation
- D. Conduction
- E. *Convection**

5. Workers of a hothouse farm work under conditions of unfavourable microclimate: air temperature is +37° C, relative humidity is 90%, air speed is 0,2 m/s. The way of heat emission under these conditions will be:

- A. Radiation
- B. Convection
- C. All the ways
- D. Heat conduction
- E. *Evaporation**

6. The temperature of the ambient environment is 38° C and relative air humidity is 50%. What ways of heat emission provide maintaining a constant temperature of the human body?

- A. Convection
- B. Radiation
- C. *Evaporation**
- D. Convection and conduction
- E. Heat conduction

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7. People adapted to high external temperature have such peculiarity: profuse sweating isn't accompanied by loss of large volumes of sodium chloride. This is caused by the effect of the following hormone upon the respiratory glands:

- A. *Aldosterone**
- B. Natriuretic
- C. Cortisol
- D. Thyroxin
- E. Vasopressin

8. What heat transfer mechanism is the most effective while the man being at 80% of air moisture and the temperature +35°C?

- A. Evaporation**
- B. Radiation
- C. Heat conduction
- D. Convection
- E.

9. Which way of heat emission by the bodies of greenhouse is the most effective at the temperature of 36°C degrees and relative humidity of 70%?

- A. –
- B. *Liquid evaporation**
- C. Thermal conduction
- D. Convection
- E. Heat radiation

1. Power inputs of a boy increased from 500 to 2000 kJ per hour. What can be the cause of it?

- A. Rise of outer temperature
- B. Mental activity
- C. Food intake
- D. *Physical exercise**
- E. Transition from sleep to wakefulness

2. Power inputs of a man were measured. In what state was this man if his power inputs were lower than basal metabolism?

- A. Relaxation
- B. Simple work
- C. Nervous tension
- D. *Sleep**
- E. Rest

3. Estimation of heat expenditures of a man's organism by means of indirect calorimetry had the following results: the organism consumed 1000 ml of oxygen and emitted 800 ml of carbon dioxide per minute. What is respiratory coefficient of a man under examination?

- A. *0,8**
- B. 1,25
- C. 1,0
- D. 0,9
- E. 0,64

4. While determining power inputs of a patient's organism it was established that the respiratory coefficient equaled 1,0. This means that in the cells of the patient the following substances are mainly oxidized:

- A. Proteins and carbohydrates
- B. Carbohydrates and fats
- C. Proteins
- D. *Carbohydrates**
- E. Fats

5. Respiratory coefficient was studied in the patient who strictly kept certain diet for 10 days. It was determined that it is 1. What diet does patient follow?

- A.* With domination of carbohydrates**
- B. With domination of proteins and fat
- C. With domination of fat and carbohydrates
- D. Mixed
- E. With domination of proteins and carbohydrates

6. A man is being measured power inputs on an empty stomach, in the lying position, under conditions of physical and psychic rest at a comfortable temperature. Power inputs will reach the maximum at:

- A. 7-8 a.m.
- B. *5-6 p.m.**
- C. 2-3 p.m.
- D. 10-12 a.m.
- E. 3-4 a.m.