

Example for an evaluation sheet with 4 multiple-choice questions

1. Which statement about heat production or heat loss of the adult human body is most accurate?
 - (A) When the ambient temperature increases from 37 °C to 80 °C, heat loss by radiation increases linearly.
 - (B)** At low air humidity, heat loss through sweating is possible even at an ambient temperature above 37 °C.
 - (C) At low air humidity and 37°C, most of the body heat is lost through breathing.
 - (D) Heat production due to shivering generally reaches 25 times the heat production of the basal metabolic rate.
 - (E) Heat production in brown adipose tissue generally reaches 10 times the heat production of the basal metabolic rate.

2. The energy expenditure of a person is to be determined using indirect calorimetry. Which of the following parameters is required for it?
 - (A) EMG (electromyogram) of the leg muscles
 - (B)** Total O₂ consumption
 - (C) Concentration of free thyroxine (fT4) in blood plasma
 - (D) Core body temperature
 - (E) Vital capacity

3. For a test person during a practical course, the following values were determined:
respiratory quotient RQ = 0.9
CO₂ output = 1.2 L/min
caloric equivalent = 20 kJ/L O₂.
How high is the energy expenditure?
 - (A) 167 W
 - (B) 334 W
 - (C) 85 W
 - (D) 667 W
 - (E)** 444 W

4. Under which of the following environmental conditions is prolonged physical exercise (such as running a marathon) most severely restricted?
 - (A) No wind, 20°C, 15% relative humidity
 - (B)** 33°C, wind speed 5 km/h and 95% relative humidity
 - (C) Wind speed 15 km/h, 25% relative humidity and 15°C
 - (D) 32°C, 5% relative humidity and wind speed 40 km/h
 - (E) Wind speed 20 km/h, 40% relative humidity and 25°C