Name   :

Neptun id. number:

”Nobel-prize physics in …”

Short Test 8.

1. The power emitted by the surface of a black body is directly proportional to:
(T: absolute temperature)

a. T   b. T^2 c. T^3 d. T^4 e. none of them

2. The wavelength at which the intensity *per unit wavelength* of the radiation produced by a black body is at a maximum , λ_{max} , is a function only of the temperature :

a. aT   b. b/T   c. cT^2 d. dT^4 e. none of them

(where a, b, c and d are constants)

3. In thermal equilibrium the energy is shared equally among all of its various forms; for example, the average energy per degree of freedom:

a. $3/2kT^2$ b. kT   c. ½kT   d. RT   e. none of them

4. The de Broglie wavelength of a particle:

a. h/p   b. p/h   c. h/(mv)   d. $\hbar/p^2$ e. none of them

5. The energy of the electron of the H-atom on the first excited state.

a. -13.6 eV   b. 13.6 eV   c. – 3.4 eV   d. – 1.51 eV   e. none of them

Show your work!