1 The velocity of an electron emitted from an alkali metal due to illumination depends on …
A ... the intensity of the illuminating light.
B ... the wavelength of the illuminating light.
C ... both the intensity and the wavelength of the illuminating light.
D ... neither the intensity nor the wavelength of the illuminating light.

2 What does the maximum point of the spectrum of the thermal radiation emitted by the absolute black body depend on?
A The temperature of the emitting body.
B The atomic composition of the emitting body.
C The color of the emitting body.
D The thickness of the emitting body.

3 The maximum point of phosphorescence emission spectrum is shifted toward longer wavelengths relative to the fluorescence emission spectrum because ...
A ... radiation emitted during fluorescence has less intensity.
B ... the life time of phosphorescence is longer than that of fluorescence.
C ... the S1 → S0 transition corresponds to greater energy difference than the T1 → S0 transition.
D ... the S1 → T1 transition is forbidden.

4 How does the power of the X-radiation change if the accelerating voltage is increased twofold and the anode current is halved?
A It will be 2 times greater.
B It will be 4 times greater.
C It will be halved.
D It will be the same.

5 The absorbed dose ...
A ... is the amount of charge absorbed in unit mass.
B ... is the amount of radiation energy incident on unit mass.
C ... is the amount of radiation energy taken up by unit mass.
D ... is the amount of positive charge generated in unit mass.

6 In which case does the mass number change?
A Alpha decay.
B Positive beta decay.
C Negative beta decay.
D Gamma decay.

7 Which of the following phenomena can be used to detect US?
A Direct piezoelectric effect.
B Inverse piezoelectric effect.
C Scintillation.
D Wave superposition.

8 Which of the following quantities is intensive?
A Charge.
B Entropy.
C Density.
D Amount of substance.

9 According to the Hagen-Poiseuille law, with what factor does the volumetric flow of a viscous fluid change if viscosity doubles without other changes?
A 1/4
B 1/2
C 1 (No change)
D 2

10 Select the correct statement on the action potential.
A The amplitude of the action potential is proportional to the intensity of the stimulus.
B The amplitude of the action potential is proportional to the diameter of the nerve fiber.
C The speed of propagation of the action potential is independent of the conductance of the extracellular fluid.
D During the last stage of the action potential the membrane becomes somewhat hyperpolarized.