Question 5 **(4 marks)**

An LED can emit three different colours with three different temperatures (K), i.e., 3000 K (warm white), 4000 K (natural white) and 6000 K (white), with three different radiation energies, $U_{3000\ K}$, $U_{4000\ K}$ and $U_{6000\ K}$ respectively.

(a) If the intensity is the same for each colour, then the relative electrical energy consumption (U) for each colour is (1 mark)

A $U_{3000\ K} > U_{4000\ K} > U_{6000\ K}$.
B $U_{3000\ K} = U_{4000\ K} = U_{6000\ K}$.
C $U_{3000\ K} < U_{4000\ K} < U_{6000\ K}$.
D There is no correlation in terms of energy consumption.

Your answer _____

(b) Which LED emits the greatest proportion of long wavelength radiation? (1 mark)

A 3000 K (warm white)
B 4000 K (natural white)
C 6000 K (white)
D They are all the same.

Your answer _____

(c) Which LED emits the greatest proportion of high frequency radiation? (1 mark)

A 3000 K (warm white)
B 4000 K (natural white)
C 6000 K (white)
D They are all the same.

Your answer _____

(d) Which LED emits the greatest proportion of fast photons? (1 mark)

A 3000 K (warm white)
B 4000 K (natural white)
C 6000 K (white)
D They are all the same.

Your answer _____