Assignments for the healthcare applications module

- Copper-64 can be produced in both reactor & cyclotron. Discuss methods' features, and pros & cons for producing ^{64}Cu-RPh for PET imaging.

- Lu-177 RPh with a few microgram of carrier molecule is important in NM therapy (200mCi). Calculate specific activity attainable in 1 week at 10e14 n flux by the two methods & compare their suitability: (i) ^{176}Lu(n,γ)^{177}Lu, 80% enriched target; (ii) ^{176}Yb(n,γ)^{177}Yb$\rightarrow$^{177}Lu, 50% enriched target.

- List priority-wise desirable characteristics of RPh for imaging (List-I) & therapy (List-II) - Pick an example of any RPh to map against the List.

- Given a free hand, draw a plan (400-500 words) for RT availability & accessibility to cancer patients in our country - incl. 2nd & 3rd tier cities.

- Which application seems the most appealing & why? What would you like to do, or propose, for that application, given a free hand? (400-500 words).