4.      In your opinion, what are the major challenges facing the development of new therapeutic antimicrobial agents? (400 words) Tips for answer given by lecturer (incorporate points into answer): the development of resistance mechanisms particularly the efflux pump is going to happen, discuss how the pump is non selective and so will affect any drug structure, horizontal gene transfer of resistance will always happen also proliferating resistance. issues with length of time for clinical trials with only a few years of actual use when in the market issues with the biocompatibility of certain drugs which are being considered as antimicrobial agents. environmental exposure to numerous chemicals has proliferated the presence of the pump and chemical resistance also  time and cost of new drug development with only limited time useful on the market - it is predicted it will take only 2 years for resistance to emerge.