**MCB2010L –Microbiology Lab**

**Exercise 9: The effects of Radiation on Growth**

* + UV radiation is most effective at 260 nm.
	+ The UV light causes thymine dimers within DNA of the cell (Figure 9-2). Distortion of the DNA molecule will occur, and the cell may be unable to replicate or transcribe its DNA properly.
	+ Vegetative cells are sensitive to UV light, while spores are somewhat resistant.
	+ The UV light can be used to disinfect the air and surfaces when the room are not in use because the harmfulness to human.
	+ Work in pair; procedure – page 57
		- Inoculate 2 TSA plates; one with *S. aureus* and the other with *B. subtilis.*  Can you think of the reason why we are comparing these two organisms?
		- Mark the bottom of the plate with permanent marker to divide the plate in two equal halves. Mark “X” on the side that was covered by the index card.
		- Expose your plates under UV light for the timed assigned. \*\*\*\*\*Take off the lid (unless specified by the instructor) and cover half of the plate with index card (Figure 9-4).
		- Remove from the UV light after assigned time of exposure. Incubate overnight.



**Exercise 10: Evaluation of Antiseptics**

* + Disinfectants and antiseptics are antimicrobial agents.
	+ Disinfectants kill or inhibit growth of pathogenic organisms but are too harsh to use on living tissues.
	+ Antiseptics do not harm living tissues.
	+ Work in pair; procedure – page 63
		- Inoculate 2 TSA plates; one with *S. epidermidis* and the other with *Ps. aeruginosa.*  Can you think of the reason why we are comparing these two organisms?
		- Mark the bottom of the plate with permanent marker to divide the plate into 4 quadrants. Label each with “alcohol”, “iodine”, “peroxide”, and mouth wash”.
		- Dip the paper disc using sterilized forceps into appropriate antiseptic and allow excess liquid to fall back into beaker.
		- Place the disc on the surface of the inoculated TSA in the center of the quadrants.
		- Incubate overnight and measure zone of inhibition (Figure 10-1) the next period.

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**Exercise 11: Importance of Hand Washing**

* + Extraneous organisms: usually superficial and transient, can be removed by a thorough hand washing.
	+ Normal flora: live deeper in the skin, normally harmless and compete invading extraneous, protecting us from skin pathogen.
	+ Common skin flora includes *S. aureus*, *S. epidermidis*, and yeast.
	+ These can cause infection if break into the skin or the body cavity during surgery. Extensive scrubbing and the use of antibacterial substance and gloves are required before surgeries.
	+ Work in groups of four; procedure – page 69
		- Mark the bottom of the plate with permanent marker to divide the plate into 2 equal halves. Label “washed” and “unwashed”.
		- Place central three fingers on the surface of agar in the “unwashed” section.
		- Wash as assigned; bar soap and scrub brush, liquid soap, waterless hand sanitizers, and 10% chlorine solution.
		- Allow to dry and press on the “washed” side of the plate.
		- Incubate overnight and check the results on next period.