

IE-341

Section 1, CRN: 30512/513/514

Section 2, CRN: 30515/516/517

Section 3, CRN: 38299/300/301

Section 4, CRN: 65886/887/888

First Semester 1438-39 H (Fall-2017) – 3(2,1,2)

“HUMAN FACTORS ENGINEERING”

Sunday, October 15, 2017 (25/01/1439H)

Tutorial 3: Hick-Hyman Law

Name:	Student Number: 43	Section: Mon@8/ Mon@10 / Tu / Wed
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Answer ALL of the following questions

- 1) An army general is predicting that enemy troops will attack simultaneously on a certain day using land, air, or sea. He is also sure the enemy will **not use a combination** of either attack method, and that either attack is equally likely to occur. Based on the information theory, how much information (in *Bits*) can the general draw from this analysis?

- 2) Assume you are a researcher who has conducted an experiment to determine subject response to hitting either a green or red button after being subjected to different stimuli. It was found that chances a person will hit the green button was 72% and 28% for the red button. Determine the
 - a) Maximum amount of information that can be drawn from this experiment, H_{max} .
 - b) Average information, H_{av} .
 - c) Degree of redundancy, $\%_{red}$.

- 3) Another experiment was conducted on 120 people to study preference in moving a control switch in one of three directions (right, left, or up) as a response to certain different stimuli (e.g. noise or light). It was found that 59 chose to go right, 42 chose up, and the remainder chose left. Determine for this experiment:
 - a) Number and percentage of people in each category (use a table)
 - b) H_{max}
 - c) H_{av}
 - d) $\%_{red}$