BMAT 160

TEST #2 – FORMULA SHEET

CHAPTER- 4: ***Permutations and Organized Counting***

Permutation: ${}_nP_r = \frac{n!}{(n-r)!}$

Combination: ${}_nC_r = \frac{n!}{(n-r)!r!}$

CHAPTER- 5: ***Combinations***

Number of Subsets: in a set with n distinct elements including the null set is 2^n

CHAPTER- 6: ***Introduction to Probability***

Probability of an event A: $P(A) = \frac{n(A)}{n(S)}$,
where, n(A) = the number of outcomes in which event A can occur and n(S) = the total number of possible outcomes

Complement Events: $P(A) + P(\bar{A}) = 1$ where, $\bar{A}$ is the complement of A.

Odds in favour of A = $\frac{P(A)}{P(\bar{A})}$, **Odds against A** = $\frac{P(\bar{A})}{P(A)}$

If Odds in favour of A = $\boldsymbol{\frac{h}{k}}$, then $P(A) = \frac{h}{h+k}$

Product Rule: P(A and B) = P(A) × P(B), where A and B are **independent** events

Conditional Probability: P(A and B) = P(A) × P(B | A), where B is **dependent** on A

P(B|A), is the probability that event B occurs, given thatA has already occurred**.**

Addition Rule:

P(A or B) = P(A) + P(B), where A and B are **mutually exclusive**

P(A or B) = P(A) + P(B) – P(A and B), where A and B are **non-mutually exclusive**