Department of Mathematics and Statistics KFUPM
STAT 301-01 Quiz#2, Time: 40 mins

Student's Name: _____ ID: _____

Q.No.1:- In how many ways can 5 boys and 5 girls sit in a row?
(a) if there is no restriction?

(b) if only the boys must sit together?

(c) if no two people of the same sex are allowed to sit together?

Q.No.2:- In Q.No.1, What is the probability that the boys are seated next to each other?

Q.No.3:- Seven balls are randomly withdrawn from an urn that contains 12 red, 16 blue, and 18 green balls. Find the probability that:

(a) exactly 3 red and 2 blue balls are withdrawn.

(b) at least 2 red balls are withdrawn.

(c) at most 1 red ball is withdrawn.

(d) all withdrawn balls are the same color.

(e) either exactly 3 red balls or exactly 3 blue balls are withdrawn.

Q.No.4:-

(a) If $P(A \mid B) = 1$ the find $P(B^c \mid A^c)$

(b) Prove or disprove that if $P(A) = 0.6$ and $P(B) = 0.5$, then A and B are mutually exclusive.