(092) Math 131:Finite Mathematics QuizTest-3(8.3-8.4): May 12, 2010

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Contents

Marks: 20; Time: 15 Minutes

NAME:.....

I.D.#:

SERIAL# SECTION #: (check: Sec.03B)

Sr.	08 *am*	07 *am*	10 *am*
	Sc 01	*Sc* 02	*Sc* 03

NOTE: SHOW ALL STEPS OF THE SOLUTION.

NO CREDIT FOR ANSWERS WITHOUT COMPLETE SOLUTION.

The questions are not in any order of difficulty at all.

Only the nonprogramable calculators are allowed.

Write the simplified answer of each question at the end of each question.

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Q.1. $(Marks:4)$. 80R11. Three capacitors taken from a local electronic store were examined to determine whether they were defective (D) or nondefective (N). What is an appropriate sample space for this experiment?

(A) $\{D, N, D, N, D, N\}$

(B) $\{DDD, NNN\}$

(C) $\{DD, DN, ND, NN\}$

(D) $\left\{ \begin{array}{c} NND, NDN, NDD, \\ DNN, DND, DDN \end{array} \right\}$

$*(E)$ $\left\{ \begin{array}{c} NNN, NND, NDN, NDD, \\ DNN, DND, DDN, DDD \end{array} \right\}$

(F) *NONE OF THE PREVIOUS GIVEN CHOICES IS CORRECT.*

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Q.2. $(Marks:4)$. If a ball is selected at random from an urn containing six red balls, five white balls, and nine blue balls, what is the probability that it will be a red ball?

$(A) \longrightarrow 0.25$ $*(B) \longrightarrow 0.30$

$(C) \longrightarrow 0.45$ $(D) \longrightarrow 0.50$

$(E) \longrightarrow 0.60$ $(F) \longrightarrow 0.70$

$(G) \longrightarrow 0.80$ $(H) \longrightarrow 0.90$

(N) *NONE OF THE PREVIOUS GIVEN CHOICES IS CORRECT.*

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Q.3. $(Marks:6)$ Committee Selection. From a class of six girls and four boys, three students are selected at random to form a group.

Find the probability that the group consists of exactly one girl and two boys.

Choice	CHOICES	*Yes* $(\surd)$
$A \longrightarrow$	0.125	
$B \longrightarrow$	0.06666667	
$C \longrightarrow$	0.15833333	
$*D \longrightarrow$	0.300000	
$E \longrightarrow$	0.500000	
$F \longrightarrow$	0.600000	
$G \longrightarrow$	0.6666667	
$H \longrightarrow$	0.750000	
$I \longrightarrow$	0.800000	
$J \longrightarrow$	0.0833333	
$K \longrightarrow$	0.144	
$L \longrightarrow$	0.166667	
$M \longrightarrow$	0.009754610578	
$N \longrightarrow$	*NONE of the ABOVE* $\downarrow\longrightarrow$ *Your Answer*	*Your Answer* $\downarrow$ $=$ ---------- $=$ $\uparrow$ *Write Answer*

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Q.4. $(Marks:6)$ .260*T*3. A fair coin is tossed and then a fair die is rolled. Let α be the probability that a head and and an odd number show and let β be the probability that a 2 or 4 shows. Then the value of $2\alpha+\beta$, the sum of the two numbers 2α and β, is given by:

$(A) \longrightarrow \frac{1}{3}$ $(B) \longrightarrow \frac{1}{4}$

$(C) \longrightarrow \frac{5}{12}$ $(D) \longrightarrow \frac{1}{2}$

$(E) \longrightarrow \frac{7}{12}$ $(F) \longrightarrow \frac{1}{12}$

$(G) \longrightarrow \frac{11}{12}$ $*(G) \longrightarrow \frac{5}{6}$

$(H) \longrightarrow \frac{2}{3}$

(N) *NONE OF THE PREVIOUS GIVEN CHOICES IS CORRECT.*

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Answer: $S = \{H1, H2, ..., H6, T1, T2, ..., T6\}$

$E = \{H1, H3, H5\}$, $E^* = \{H2, H4, T2, T4\}$.

Probability: $\alpha = |E| \,/|S| = 3/12 = 1/4$.

Pr*obability* : $\beta = |E^*| \,/\,|S| = 4/12 = 1/3$

$Sum = 2\alpha + \beta = 1/2 + 1/3 = 5/6$.

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