

Practice Quiz 6

Closed Book and Notes – No Calculators Allowed

1. The **ON-SET** of the function realized by this circuit is:

- (A) $\sum_{X,Y,Z}(0,2,4)$
- (B) $\sum_{X,Y,Z}(3,5,7)$
- (C) $\sum_{X,Y,Z}(1,3,5,6,7)$
- (D) $\sum_{X,Y,Z}(0,1,2,4,6)$
- (E) none of the above

2. Expressed in minimum **sum-of-products** form, the function realized by this circuit is:

- (A) $X \cdot Y + X \cdot Z + X' \cdot Z$
- (B) $X' \cdot Z' + Y' \cdot Z'$
- (C) $Y \cdot Z' + Y' \cdot Z' + X' \cdot Y'$
- (D) $Z + X \cdot Y$
- (E) none of the above

3. Expressed in minimum **product-of-sums** form, the function realized by this circuit is:

- (A) $(X+Z) \cdot (Y+Z)$
- (B) $(X'+Y') \cdot (X+Y) \cdot (Y+Z')$
- (C) $Z' \cdot (X'+Y')$
- (D) $(X'+Z') \cdot (Y'+Z')$
- (E) none of the above

Draw K-map:

	X'		X	
Z'	0	1	6	7
Z	2	3	4	5
	Y'	Y	Y'	Y

$F' = X'Z + XY + XZ$
 $F = X'Z' + Y'Z'$
 $F' = Z + XY$
 $\Rightarrow F = Z' \cdot (X' + Y')$

4. The circuit shown exhibits the **following type of hazard** when its input, X, transitions from **low-to-high**:

- (A) a static-zero hazard
- (B) a static-one hazard
- (C) a dynamic hazard
- (D) a minterm hazard
- (E) none of the above

5. The circuit shown exhibits the **following type of hazard** when its input, X, transitions from **high-to-low**:

- (A) a static-zero hazard
- (B) a static-one hazard
- (C) a dynamic hazard
- (D) a minterm hazard
- (E) none of the above

Timing diagram showing X, A, and Y. A red circle highlights a glitch in A during a high-to-low transition of X, labeled "Static-1 hazard".