National University of Computer and Emerging Sciences, Lahore Campus

Course:	Software Design and Analysis	Course Code:	CS-3004
Program:	BS (Computer Science)	Semester:	Fall 2023
Duration:	40 Minutes	Total Marks:	25
Quiz Date:	25-Oct-23	Roll No.	
Section:	BCS-5L	Name:	

Q1) Define External, Internal and Temporal Events. Provide an example for each. (10 marks)

External Events:
External events are events triggered by factors or sources external to the system or object being modeled. These events can originate from the environment, user input, or other external entities.

Internal Events:
Internal events, also known as self-triggered events, are events that are generated or triggered from within the system or object itself. These events are often used to represent spontaneous state changes or actions that occur without external influence.

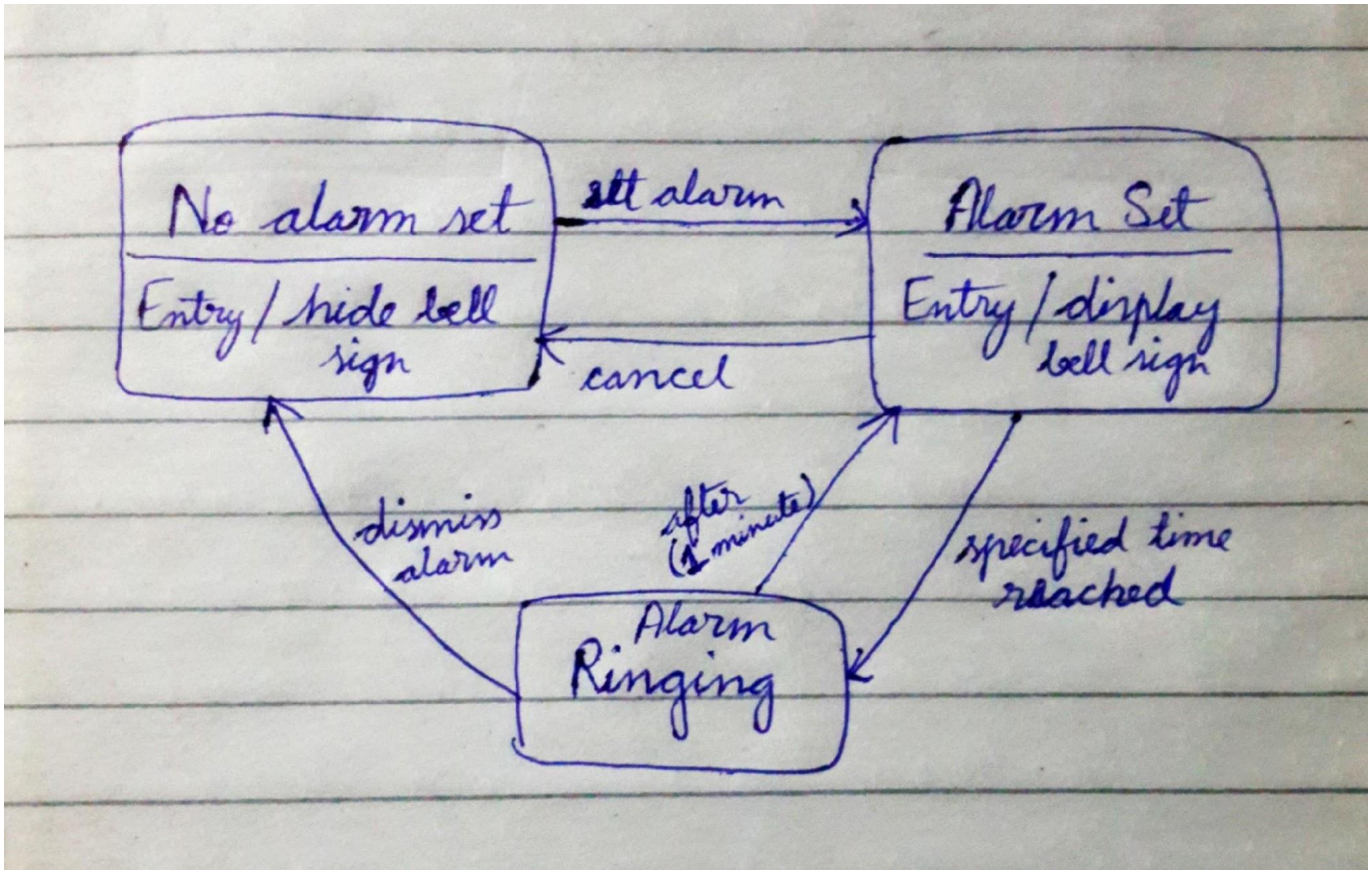
Temporal Events:
Temporal events are events that are based on the passage of time rather than external or internal triggers. These events represent actions or state changes that occur at specific time intervals, delays, or schedules.

***Provide at least one example for each.**

Q2) Following is a description of a behavior of an alarm clock: (10 marks)

An alarm clock can have an alarm set or no alarm set. When the user sets an alarm, a bell sign will be displayed on the clock. When a user cancels an alarm, the bell sign will disappear from the clock. If user sets an alarm, the alarm will start ringing at the specified time. Now the user can either dismiss the alarm or it gets snoozed. If dismissed, there is no alarm set. If the alarm is ringing and the user has not dismissed it, then after a minute the alarm is set again as it is automatically snoozed.

Give a UML state diagram for the afore-mentioned alarm clock.



Q3) Match each entry in the first column with the entry in the second column: (5 marks)