Jaypee University of Engineering & Technology, Guna

T-1(Even Semester 2023)
18B11CI612 – SOFTWARE ENGINEERING

Maximum Duration: 1 Hour

Maximum Marks: 15

Notes:
1. This question paper has 03 questions.
2. Write relevant answers only.
3. Do not write anything on question paper (Except your Er. No.).

		Marks	CO No.

Q1. Consider the following requirements for software to be developed **[05]** CO2
for controlling a chemical plant. The chemical plant has a number
of emergency conditions. When any of the emergency conditions
occurs, some specified actions should be taken. The different
emergency conditions and the corresponding actions that need to
be taken are as follows:

   I. If the temperature of the chemical tank is high, then the water shower should be turned *ON*.

   II. If the temperature of the chemical tank falls below T_1^0 C, then the heater should be turned *ON* and the water shower should be turned *OFF*.

   III. If the temperature of the chemical tank exceeds T_1^0 C, then the heater should be turned *OFF*.

   IV. If the temperature of the chemical tank exceeds T_2^0 C the alarm bell should be sounded.

   V. If the pressure in the tank rises above P_1, then alarm bell should be sounded.

   VI. If the pressure of the tank goes down, then alarm bell should be *OFF*.

Identify the problems in the above requirement statements if any.

Q2. (a) Adaptive Software Development (ASD) is a technique for **[02]** CO1
building of complex software systems. With of help of suitable
diagram, explain how human collaboration and team self-
organization of ASD help in complex software development.

(b) With the help of suitable diagram, explain the different phases of Extreme Programming approach. [03]   CO1

Q3. Consider the following simplified case study "University Web kiosk system" for providing the services to their students and employees: CO3

The students of the University can check the list of registered subjects, results of previous semesters, personal information, and subject wise attendance status of registered subjects, status of fees deposited, and the names of concerned faculty members for the registered subjects. The employees of the university can be faculty members or administrative staff members. Faculty members can check the list of registered students in their concern courses, personal information of students registered in their concern courses, enter the date wise attendance, enter the marks obtained in different examinations, and apply for a leave. The administrative staff provides the login information to students and employees, prepare the results of students, apply for a leave.

(a) Identify the actor(s) for use case model

(b) List possible use cases from above case study   [01]

(c) Draw the use case diagram for the above mentioned case study.   [01]

    [03]