Exam No: _____

GANPAT UNIVERSITY

B.TECH SEM-VI (COMPUTER ENGINEERING / INFORMATION TECHNOLOGY)

FIRST INTERNAL EXAMINATION – FEBRUARY-MARCH 2023

2CEIT6PE2 : Software Validation and Testing

Time: 1 Hour **Total Marks: 2**

Instructions:
1) Figures to the right indicate full marks.
2) Be precise and to the point in your answer.
3) The text just below marks indicates the Course Outcomes Numbers, (CO) followed by th Bloom's taxonomy level of the question, i.e., R: Remember, U: Understand, A: Apply, N Analyze, E: Evaluate, C: Create.

Q1 Discuss any four software testing principles in detail. **[4]**
1R

Q2 A life insurance company has a base premium of $0.50 for all ages. Based on age group, an additional monthly premium has to be paid that is as listed in the table below. For example: A person aged 34 has to pay a premium = base premium + additional premium = $0.50 + $1.65=$2.15 **[4]** **2C**
Create some equivalent classes along with test data for the given example using the equivalence partition technique of black box testing.

Age Group	Additional Premium
Under 35	$1.65
35-39	$2.87
60+	$6.00

[P.T.O

Q3 A program calculates the total salary of an employee with the given conditions that if the working hours are less than or equal to 48, then give normal salary. The hours over 48 on normal working days are calculated at the rate of 1.25 of the salary. However, on public holidays or Sundays, the hours are calculated at the rate of 2.00 times of the salary. Design test cases using decision table testing. [4] 2C

Q4 Consider the following program segment: [4] 2A

```
    main()
    {
        int number, index;
1       printf("Enter a number");
2       scanf("%d, &number);
3       index = 2;
4       while(index <= number - 1)
5       {
6           if (number % index == 0)
7           {
8                   printf("Not a prime number");
9                   break;
10          }
11          index++;
12      }
13      if(index == number)
14      printf("Prime number");
15  } //end main
```

(a) Draw the DD graph for the program.
(b) Calculate the cyclomatic complexity of the program using all the methods.
(c) List all independent paths.
(d) Design test cases from independent paths.

Q5 What is Mutation testing? Explain its all types with examples of each. [4] 2U

END OF PAPER