GALGOTIAS UNIVERSITY

School of Computing Science and Engineering

Bachelor of Technology in Computer Science and Engineering
Mid Term Examination - May 2024

Duration : 90 Minutes
Max Marks : 50

Sem IV - C1UC422T - Mathematical Puzzles and Games

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1) In certain code language, ROCK=47 and LATE=38. Find the code for FOOL? — K2 (2)

2) In how many ways can three jobs I,II and III be assigned to three persons A,B and C If one person is assigned only one job and all are capable of doing jobs. — K1 (3)

3) In an examination, a student has to answer 4 questions out of 5. Questions 1 and 2 are compulsory. Find the number of ways in which the student can make a choice. — K2 (4)

4) What is the minimum number of students required in a discrete mathematics class to be sure that at least six will receive the same grade, if there are five possible grades, A, B, C, D, and E? — K2 (6)

5) Find the number of rectengles in the given figure: — K3 (6)

6) Find the missing operator from the following questions? — K3 (9)
(i) 1,3,4,7,11,18,29,?
(ii) 2,1,1/2,1/4,?
(iii) 7,10,8,11,9,12,?

7) Three number are in the ratio of 3 : 4 : 5 and their L.C.M. is 2400. Their H.C.F. is — K4 (8)

8) Show that $10^{2n-1} + 1$ is divisible by 11 for all natural numbers. — K4 (12)

OR

For any positive integer number n, prove that $n^3 + 2n$ is always divisible by 3. — K4 (12)