

Seat No:

Enrollment No:

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech/Int. B.Tech, Summer 2024-25 Examination

Semester: V / VI / X

Subject Code: 303105311

Subject Name: Quant and Reasoning (Semester- 5,6,10)

Date: 22-04-2025

Time: 2.00 pm to 4.30 pm

Total Marks: 60

Instructions:

1. This question paper comprises of two sections. Write answer of both the sections in separate answer books.
2. From Section A, **Q.1** is compulsory, From Section B, **Q.1** is compulsory.
3. Figures to the right indicate full marks
4. Draw neat and clean drawings & Make suitable assumptions wherever necessary.
5. Start new question on new page.
6. BT- Blooms Taxonomy Levels – Remember-1, Understand -2, Apply-3, Analyse-4, Evaluate-5, Create-6

SECTION - A

Q.1	Answer the following questions.	Marks	CO	BT
	A. (i) Define a rational number and provide one example. (ii) List the prime factors of 72 and 90. (iii) Evaluate the LCM of 15 and 20 using the prime factorization method.	06	CO2	BT1
	B. Evaluate the following: (i) If $A:B = 3:4$ and $B:C = 8:9$, Evaluate $A:B:C$. (ii) If $A:B = 2:3$, $B:C = 4:5$ and $C:D = 6:7$, Evaluate $A:D$. (iii) Given two numbers which are in the ratio of 3:4. If 8 is added to each of them, their ratio is changed to 5:6. Find the two numbers.	06	CO2	BT3
Q.2	A. A bag contains 3 red balls, 5 yellow balls and 7 pink banks. If one ball is drawn at random from the bag, what is the probability that it is either pink or red?	04	CO1	BT4
	B. A train of length 100 meters is moving at a speed of 70 km/hr. In what time it will cross a man who is walking at 10 km/hr in the same direction?	05	CO3	BT5
	OR			
	B. A clock starts at 3:00 PM. How far does the minute hand move by 4:45 PM?	05	CO2	BT5
Q.3	A. Four friends A, B, C and D live in a same locality. The house of B is in the east of A's house but in the north of C's house. The house of C is in the west of D's house. D's house is in which direction of A's house?	04	CO1	BT2
	B. Three pipes A, B and C can fill a cistern in 8 minutes, 12 minutes and 16 minutes respectively. What is the time taken by three pipes to fill the cistern when they are opened together?	05	CO3	BT5
	OR			
	B. In an examination, out of 20 students in a class, in Mathematics 2 students scored 100 marks, 3 students scored 0, and average marks for rest of the students was 40. What is the average mark of the whole class?	05	CO2	BT2

SECTION - B

Q.1	Answer the following questions.	Marks	CO	BT
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	A. (i) Define an Arithmetic Progression (AP) and give an example. (ii) State the formula for the nth term of an Arithmetic Progression and List all terms. (iii) State the formula for the sum of first n terms in Arithmetic Progression.	06	CO1	BT1
	B. (i) A vendor bought 20 oranges at Rs. 56 and sold them at Rs. 35 per dozen. Find his gain or loss per cent. (ii) A bicycle is bought for Rs.200 and sold at a loss of 10%. Calculate the selling price and the amount of loss incurred. (iii) A bookstore purchased 120 textbooks for Rs.25 each and sold them at a profit of 15%. Calculate the total profit.	06	CO3	BT3
Q.2	A. A company has 4 managers and 8 engineers. A team of 5 members is to be formed such that it includes at least 1 managers. How many ways can this team be formed?	04	CO2	BT2
	B. Simple interest on a certain sum of money for 3 years at 8% per annum is half the compound interest on Rs. 4000 for 2 years at 10% per annum. Find the sum placed on simple interest.	05	CO3	BT3
	OR			
	B. A structure consists of: A 3×3 base layer (9 cubes). A 2×2 second layer (4 cubes). A 1 cube on top. Question: How many cubes are there in total?	05	CO3	BT4
Q.3	A. (1) Solve this Alphabet Based Analogy Reasoning MN : F :: OP : ? (2) In a certain code language '1 2 3 4 5 6 7 8 9 10' is written as COMPUTRSNE, then how will 4 3 2 1 6 5 10 9 8 7 be written in that code language?	04	CO3	BT4
	B. Pointing to a woman, a man says, "She is the wife of the son of my mother's only son." How is the woman related to the man?	05	CO2	BT4
	OR			
	B. Three-fourths of one-fifth of a number is 60. Find the number.	05	CO1	BT3