BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2025)

CLASS: IMSc **SEMESTER : VI**
BRANCH: CQEDS **SESSION : SP/2025**

SUBJECT: ED319 GAME THEORY

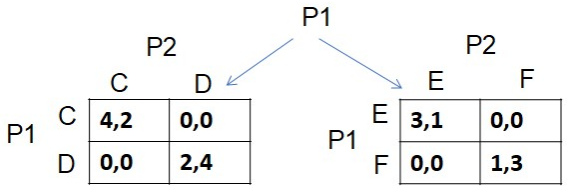
TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1	Find the strategies that survive iterated elimination of strictly dominated strategies in the following normal form game.	[5]	1	

		Player 2		
		L	C	R
Player 1	U	4, 2	0, 1	2, 3
	M	2, 1	2, 3	3, 2
	D	3, 0	3, 2	1, 3

Q.2	Now compute the Nash equilibria for the above game (pure and mixed with diagram if needed).	[2+3]	1					
Q.3	Birla Soft and HCL Tech are developing competing products for a market of fixed size. The longer a firm spends on development, the better its product. But the first firm to release its product has an advantage: the customers it obtains will not subsequently switch to its rival. A firm that releases its product first, at time t, captures the share $h(t)$ of the market, where h is a function that increases from time 0 to time T, with $h(0) = 0$ and $h(T) = 1$. The remaining market share is left for the other firm. If the firms release their products at the same time, each obtains half of the market. Each firm wishes to obtain the highest possible market share. Model this situation as a strategic game and find its Nash equilibrium.	[5]	2					
Q.4	Consider the following game. Identify the strategy spaces and solve for Nash equilibria in normal form.	[2+3]	2					



Q.5	Are all the Nash solutions obtained subgame perfect? If not which of them are SPNE? How did you differentiate?	[2.5+2.5]	2	

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