



PRESIDENCY UNIVERSITY

BENGALURU

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End - Term Examinations – MAY 2025

Date: 21-05-2025

Time: 01:00 pm – 04:00 pm

School: SOM-PG	Program: MBA	
Course Code: MBA3046	Course Name: Game Theory in Business	
Semester: IV	Max Marks: 100	Weightage: 50%

CO - Levels	C01	C02	C03	C04	C05
Marks	19	19	34	28	-

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 3marks.

10Q x 3M=30M

1.	Discuss the key elements of a game in game theory?	3 Marks	L2	C01
2.	What is a coordination game in game theory?	3 Marks	L2	C01
3.	How does the availability of information influence decision-making in a game? Provide an example.	3 Marks	L2	C01
4.	What is a simultaneous-move game? Provide an example.	3 Marks	L2	C02
5.	What are discrete strategies in simultaneous-move games?	3 Marks	L2	C02
6.	How does uncertainty affect players choices in random deal games?	3 Marks	L2	C02
7.	Explain the difference between simultaneous games and sequential games in game theory. Give one example of each.	3 Marks	L2	C03
8.	Define pure strategy in the context of game theory.	3 Marks	L2	C03
9.	Define mixed strategy in the context of game theory.	3 Marks	L2	C03
10.	Explain strategic randomization? Why is it useful?	3 Marks	L2	C04

Part B

Answer the Questions.

Total Marks 40M

11.	a.	Discuss the importance of strategic thinking for businesses operating in highly competitive environments, using a real-world example.	10 Marks	L3	C01
Or					
12.	a.	Create a game model for a business competition between two smartphone companies. Identify the players, strategies, and payoffs.	10 Marks	L3	C01
Or					
13.	a.	Analyze a situation where businesses must coordinate on technology standards (e.g., USB-C vs. proprietary chargers). How can coordination be achieved?	10 Marks	L3	C02
Or					
14.	a.	Explain how common knowledge among competitors can prevent coordination failure using an example.	10 Marks	L3	C02
Or					
15.	a.	Analyze the War of Attrition in the context of two companies battling for market dominance in the streaming industry.	10 Marks	L3	C03
Or					
16.	a.	Explain how companies like online retailers can use randomized promotional strategies to stay competitive.	10 Marks	L3	C03
Or					
17.	a.	Model a market entry game where an incumbent firm must decide whether to fight or accommodate a new entrant.	10 Marks	L3	C04
Or					
18.	a.	Develop a sequential-move game for two pharmaceutical companies deciding on drug patent applications.	10 Marks	L3	C04

Part C

Answer all the Questions. Each question carries 15marks

2Q x 15M=30M

19.	a.	Taxi Jam in China	15 Marks	L4	C03
<p>The US private taxi hailing company, Uber, with its deep pockets, started making forays into China and other countries of Southeast Asia in 2015. It wanted to set up Uber China as a separate business, a first one by Uber in a foreign country. It enticed customers with huge subsidies and even services such as food delivery in Indonesia during the month of Ramadan. The local companies geared up to give it a fight.</p> <p>China's largest private taxi hailing company, Didi Kuaidi was formed in February 2015 after the merger of the top two car-hailing apps, Didi Dache and Kuaidi Dache. While Didi claimed that it controlled 80 per cent of the Chinese market, Uber said that it controlled 30-35 per cent of the same market. Didi had the home</p>					

		<p>advantage, while Uber was willing to grant \$1 billion worth of subsidies to consumers and drivers, logging 1 million users a day.</p> <p>In order to raise money to fight, Didi went in for successful round of fundraising, gathering \$2 billion in July 2015. In August, it invested in Malaysia's GrabTaxi to join hands with other regional players to halt Uber's incursions into the region. Not to be outdone, in September, Uber raised \$1.2 billion for its China operations from investors that included the Chinese search engine Baidu. But by September end, Didi had invested an undisclosed amount in the Indian taxi-hailing group Ola, to form a global alliance against Uber.</p> <p>Analysts had predicted that the taxi app war would be won by the company that would be able to spend more. According to venture capitalist firm Gobi Partners' Chibo Tang, "Cash is really the key to survival." The downside risk in the race for market share had begun to show up, when a study by PwC found that Didi was making losses three times its revenues, amounting to \$571 million in the first five months of 2015. The figures suggested that it made a loss of \$2.75 per journey, but Didi's President, Jean Liu justified, "We wouldn't be here today if it wasn't for burning cash." It aimed at possessing half of the \$50 billion market by 2020.</p> <p>Questions:</p> <p>Q1: What were the key strategic differences between Uber and Didi in their efforts to capture market share in China and Southeast Asia?</p> <p>Q2: Is a cash-burning strategy sustainable for companies like Didi and Uber in the long run? Justify your answer with financial reasoning.</p> <p>Q3. How did international partnerships and investments influence the competitive landscape in the taxi-hailing industry?</p>			
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20.	a.	<p>Auction house play RPS</p> <p>At the Rock, Paper, Scissors (RPS) tournaments held at Toronto organised by the World RPS Society, the veterans advise that the players should try to discern a pattern in the rival's play. This is because data shows that the moves are not all played with a one-third probability. According to the World RPS Society, the tournament players reported the proportions of rock as 35.4 per cent, paper as 35 per cent and scissors as 29.6 per cent. Many players feel that facial expressions or gestures can provide a clue to the next move by a rival. In short, they feel it is not a trivial game, where winning or losing depends only on luck.</p> <p>In fact, in 2005, RPS was used to decide between auction houses Christie's and Sotheby's to sell French Impressionist paintings worth \$20 million owned by a Japanese electronics company called Maspro Denkoh Corp. The works of art included a Cezanne, a Sisley, a van Gogh and a Picasso. After studying the</p>	15 Marks	L4	CO4
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		<p>presentations by both the auction houses, which were equally matched, the company's President, Takashi Hashiyama asked them to settle between themselves, who would carry out the auction. But, when the auction houses also failed to settle the matter, he decided to use RPS to select the auctioneer.</p> <p>Commenting on strategies for RPS, Sotheby's Impressionist and modern art expert, Blake Koh said, "But this is a game of chance, so we really didn't give it that much thought. We had no strategy in mind." In contrast, president of Christie's Japan, Kanae Ishibashi went about doing her homework and researching on the game. She got advice from two 11-year old girls that scissors was the safest since rock would be the obvious choice. In the event of a tie, she was to play scissors again, since the opponent would expect her to play rock. At the Masproh meeting, she wrote down scissors, while the Sotheby's representative wrote down paper. The paintings were auctioned off by Christie's, earning a \$1.9 million commission.</p> <p>Questions:</p> <p>Q1: How did Christie's strategic approach to Rock, Paper, Scissors (RPS) differ from Sotheby's, and what does this case highlight about the role of research and preparation in business decision-making?</p> <p>Q2: The World RPS Society reports that players do not use a perfect one-third probability for each move. How can an understanding of probability and game theory help businesses gain a competitive edge in uncertain decision-making scenarios?</p> <p>Q3: The case suggests that players believe facial expressions and gestures can reveal patterns in an opponent's moves. How can behavioural analysis and psychology be applied in negotiation and competitive business environments?</p>			
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