International Institute of Information Technology, Hyderabad

Deemed to be University

End Semester Examination : Technology Product Entrepreneurship (TPE)- Spring 2025

Max. Time: 2 Hr Max. Marks: 100

General Instructions to Students:
- Place your Student ID card on the desk during the examination.
- Write structured and insight-rich answers. Unsupported generalities will attract penalties.
- Apply course frameworks . Clearly state assumptions. Include diagrams, where relevant.
- Use real-world or course project examples where helpful.

Part 1 – Higher-Order Concepts (20 Marks Total, @5 each)

1. A startup has developed an AI-driven augmented reality (AR) platform for industrial maintenance, but lacks customer traction. Propose a validation approach using the Value Proposition Canvas to confirm problem-solution fit, specifying customer segment, pains, and metrics for success.
2. For a deep tech startup building a wearable health monitoring device, articulate the problem, customer, and solution hypotheses. Suggest one validation method, to evaluate market potential in the consumer wellness market.
3. Explain the importance of achieving Minimum Viable Product (MVP) readiness in a deep tech startup's early stages. How does it differ from a fully scaled product, and why is it critical for resource-constrained startups?
4. Use idea hexagon to come out with 6 ideas for "Spatial Computing (Software): AR/VR apps tied to physical locations, spatially aware interfaces.

5. Write down the elevator pitch for a moonshot startup (10+ year horizon, frontier tech e.g Teleportation)? Justify the business viability with an example or hypothetical use case. **(Bonus : 5 Marks)**

Part 2 – Advanced Framework Application (40 Marks total, @20 each)

1. (20 marks) PlasmaTech is a startup building a cold plasma sterilization system to eliminate antibiotic-resistant bacteria in hospitals. The technology is highly novel, expensive, and difficult to explain to non-technical stakeholders.

   a) (10 marks) Develop a **Value Proposition Canvas** for PlasmaTech, identifying a specific customer segment, their jobs, pains, and gains, and how PlasmaTech solution addresses these. Base your response on your understanding of competitive solutions in the market.

   b) (10 marks) Prepare a layered GTM strategy using the following components:
      a) Beachhead segment and early adopter persona
      d) Constraints in regulatory and trust-building environments
      e) Highlight at least two GTM traps that PlasmaTech should avoid.

2. (20 Marks) LinguaNet is a startup building an NLP platform for real-time multilingual translation and sentiment analysis in virtual meetings.

   a) (8 marks) Apply the Problem-Solution Fit and articulate what critical hypotheses must LinguaNet validate before building out a full-stack commercial solution?

   b) (12 marks) Fill out the full Business Model Canvas, discuss three customer segments highlighting the use case for which they will buy and identify the channels to reach each of the customer segments

Part 3 – Deep-Dive Case Study (40 Marks)

NeuroLink Solutions, born in Hyderabad's thriving tech hub in 2023, is on a mission to redefine human-computer interaction with a non-invasive neural interface. Founded by Dr. Ananya Rao, a neuroscientist driven to empower the disabled, Vikram Patel, a machine learning expert, and Priya Menon, an operations strategist from Intel, their NeuroLink Headset uses EEG sensors and an ARM processor to convert brain signals into digital commands with 95% accuracy in 50 milliseconds. With $12 million in seed funding, their 35-person team integrates the $300 device with Unity for gaming and Windows Voice Control for accessibility, using GDPR-compliant cloud-based ML analytics to process neural data securely.

The $5 billion neural interface market by 2030 is fiercely competitive, with Neuralink's invasive BCIs targeting medical niches, Emotiv's less accurate headsets at lower costs, and Meta Quest's VR controls challenging consumer adoption. NeuroLink's affordable, precise headset excels in gaming, where a 2024 pilot with 500 gamers showed 80% preferring neural controls for immersive avatar navigation, amplified by X posts from Gamescom influencers. In accessibility, 50 spinal injury patients achieved 90% success in hands-free tasks like typing, earning praise from NGOs for affordability compared to $10,000 invasive alternatives. A recent pilot with a Hyderabad design firm showed 20% productivity gains in hands-free CAD, hinting at enterprise potential.

Scaling production is tough, with $150-per-unit costs and component shortages limiting output. FDA/CDSCO approvals for medical use require $5 million and 18 months, complicated by neural data privacy under GDPR and HIPAA. The two-hour training for neural control frustrates gamers, and Linux compatibility for assistive software lags. With an 18-month runway, a $5 million gaming platform deal offers quick revenue but 30% margins and VR competition, while $10 million in enterprise and medical contracts promises 70% margins but demands $5 million in trials and a $20 million Series A.

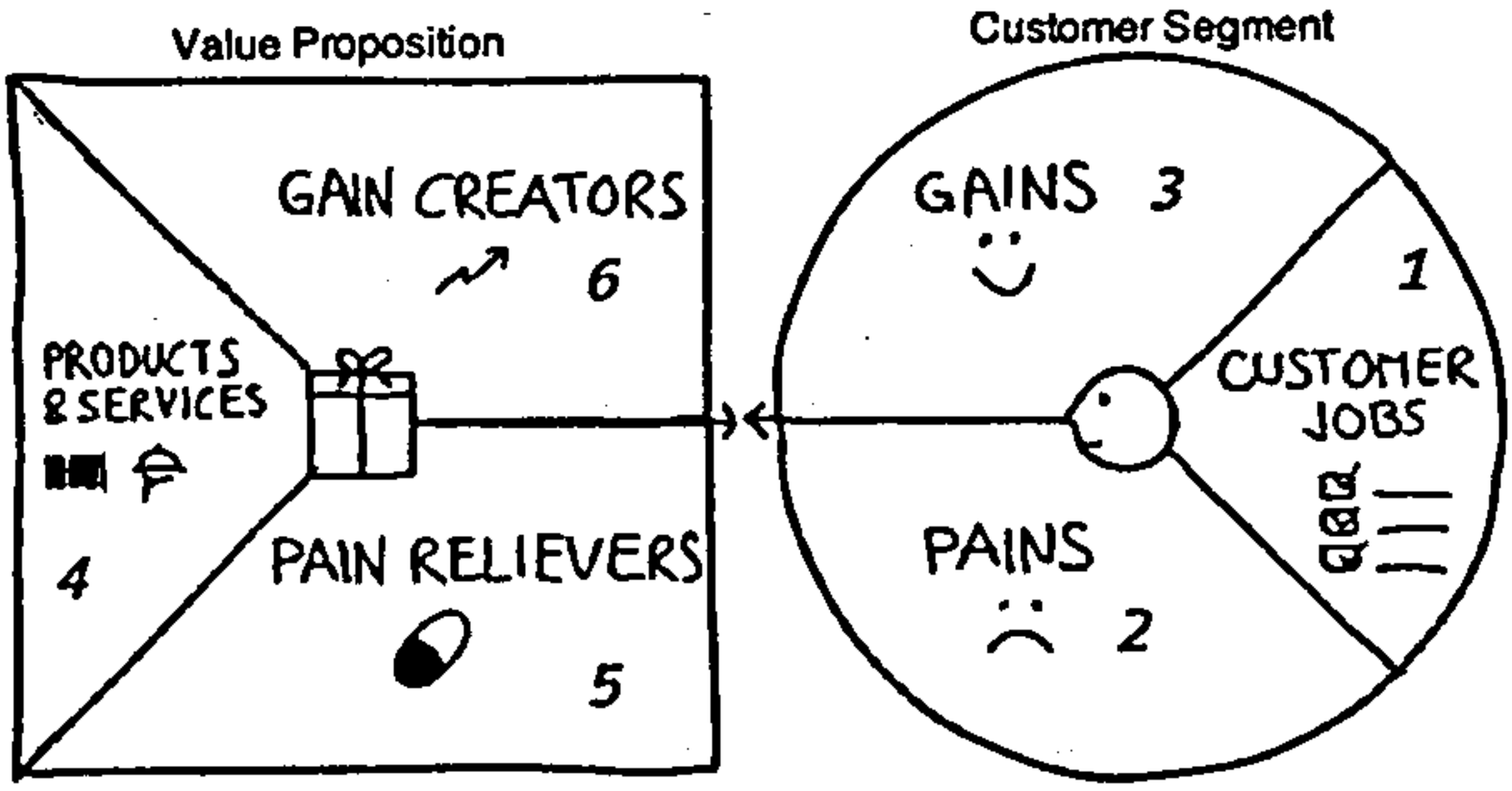
Ananya pushes for enterprise/medical, aligning with NeuroLink's mission to transform lives, especially for disabled users, and sees gaming as a distraction from their deep tech roots. Vikram favors gaming's fast sales cycles to sustain funding, warning that regulatory delays could bankrupt them. Priya suggests testing both paths but cautions against resource dilution. NeuroLink's two pending patents on EEG processing and ML algorithms strengthen their IP, but investor pressure for a clear strategy looms. A misstep could deplete funds, lose market share, or derail their vision of revolutionizing interaction through neural technology.

Analyze scaling in gaming versus pivoting to enterprise/medical, aligning with NeuroLink's vision and market trends.

a) Analyse & justify the path you would take. List out the pros & cons of each path.
b) Identify revenue streams, partnerships, and cost structure, for each path
c) List out three risks & propose risk mitigation strategy – for path you have chosen

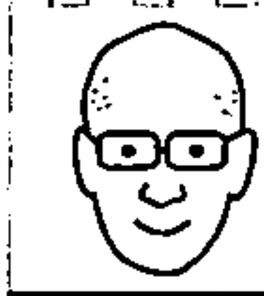
Reference Material

Sl No	Idea Hexagon Strategy	Idea	Customers
1	*Main Idea*		
2	*X^d*		
3	*X+Y*		
4	$\bar{X}$		
5	$X_{\uparrow}$		
6	$X_{\downarrow}$		
7	*X++*		



Problem Top 3 problems	Solution Top 3 features	Unique Value Proposition Single, clear, compelling message that states why you are different and worth buying	Unfair Advantage Can't be easily copied or bought	Customer Segments Target customers
	Key Metrics Key activities you measure		Channels Path to customers	
Cost Structure Customer Acquisition Costs Distribution Costs Hosting People, etc.			Revenue Streams Revenue Model Life Time Value Revenue Gross Margin	
PRODUCT			MARKET	

Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
	Key Resources		Channels	
Cost Structure		Revenue Streams		



STARTUP MADLIBS

My company, _____ .
NAME OF COMPANY

is developing _____
A DEFINED OFFERING

to help _____
A DEFINED AUDIENCE

_____ with
SOLVE A PROBLEM

_____ .
SECRET SAUCE

Example: My company, the founder Institute, is developing a training and mentoring program to help entrepreneurs launching a new startup create meaningful and enduring technology companies with shared equity that encourages peer support.

Complete your Founder Institute Application Now: http://fi.co/join

Bowling Alley Market Development