

MODEL QUESTION PAPER

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SECOND SEMESTER B. TECH DEGREE EXAMINATION, MONTH AND YEAR

Course Code: UCEST206

Course Name: ENGINEERING ENTREPRENEURSHIP AND IPR

Max. Marks: 40		Duration: 2 Hours 30 minutes
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PART A

	Answer all questions. Each question carries 3 marks	CO	Marks
1	Define the term <i>entrepreneurial mindset</i> and explain its importance.		(2)
2	List and briefly explain the types of Intellectual Property Rights (IPR).		(2)
3	What is value proposition, and why is it important for startups?		(2)
4	Describe the role of customer feedback in refining market strategies.		(2)
5	Write the steps involved in preparing a financial projection for a business plan.		(2)
6	Briefly describe two stakeholder engagement strategies used in prototype development.		(2)

PART B

Answer any one full question from each module. Each question carries 8 marks

Module 1

9	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: center;">a)</td><td>Discuss the frameworks for fostering innovation in startups. How does building a strong team influence the success of innovation?</td><td style="width: 5%;"></td><td style="width: 5%; text-align: center;">(7)</td></tr> <tr> <td style="text-align: center;">b)</td><td>A startup aims to launch a mobile-based health tracking application. Identify the statutory compliances they need to fulfill and outline strategies for protecting their intellectual property.</td><td></td><td style="text-align: center;">(7)</td></tr> </table>	a)	Discuss the frameworks for fostering innovation in startups. How does building a strong team influence the success of innovation?		(7)	b)	A startup aims to launch a mobile-based health tracking application. Identify the statutory compliances they need to fulfill and outline strategies for protecting their intellectual property.		(7)		
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Module 2

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Module 3

13	a)	What are the key components of a business plan? Highlight the role of marketing and operations strategies in ensuring business sustainability		(7)
	b)	A startup is launching a food delivery app focusing on local cuisine. Develop a business plan framework including market analysis, marketing strategy, and risk mitigation approaches		

Module 4

15	a)	Describe the prototype development process, including resource allocation and quality assurance. Why is engaging with advisors and mentors important during this phase?		(7)
	b)	An engineering team is prototyping a low-cost robotic arm for industrial use. Create a stakeholder engagement strategy to attract investors and secure partnerships while ensuring product quality and timely delivery.		

Sample Questions- Module wise

Module-I: Introduction to Ideation, Innovation & Entrepreneurship

Total Marks: 30

Duration: 90 Mins

PART A: Short Answer Questions

(Answer all questions. Each question carries 3 marks.)

(6 x 3 = 18 Marks)

1. Define *innovation* and discuss its importance in entrepreneurship.
2. Differentiate between *copyrights* and *patents* in Intellectual Property Rights (IPR).
3. What are the statutory requirements for starting a business in India?
4. Explain the concept of *team dynamics* and its importance in entrepreneurship.
5. Identify two idea generation techniques and describe their application.
6. Discuss the role of IPR in securing funding for startups.

PART B: Descriptive and Case Study Questions

(Answer one question from each set. Each question carries 6 marks.)

(2 x 6 = 12 Marks)

7(Descriptive):

- (a) Discuss the frameworks for innovation and their application in the engineering domain. *(4 marks)*
- (b) Explain the significance of identifying pain points in developing innovative solutions. *(2 marks)*

OR

8 (Case Study):

A software engineer has developed a new AI tool to optimize inventory management for small businesses.

- (a) Identify the types of IPR they can use to protect their innovation. *(2 marks)*
- (b) Suggest a strategy to form a team and identify essential skill sets. *(2 marks)*
- (c) Recommend how they can validate their idea with potential users. *(2 marks)*

9 (Descriptive):

- (a) What is the entrepreneurial mindset, and how does it drive innovation? *(3 marks)*
- (b) Explain strategies for refining ideas to bring innovation to life. *(3 marks)*

OR

10 (Case Study):

A group of students aims to start a drone delivery business.

- (a) Identify the statutory requirements they need to comply with. *(2 marks)*
- (b) Propose how they can validate their idea in the market. *(2 marks)*
- (c) Discuss the importance of team roles in executing their plan effectively. *(2 marks)*

Module-II: Problem and Solution Canvas Preparation

Total Marks: 30

Duration: As per exam schedule

PART A: Short Answer Questions

(Answer all questions. Each question carries 3 marks.)

(6 x 3 = 18 Marks)

1. Define *value proposition* and explain its significance in entrepreneurship.
2. What is *customer segmentation*, and why is it important?
3. Outline the purpose of *persona development* in customer profiling.
4. Discuss the role of competitor analysis in market positioning.
5. Describe the process of conducting market research for a startup.
6. Explain the importance of customer feedback in refining a product.

PART B: Descriptive and Case Study Questions

(Answer one question from each set. Each question carries 6 marks.)

(2 x 6 = 12 Marks)

7 (Descriptive):

- (a) Explain the steps involved in preparing a problem canvas. *(3 marks)*
- (b) Discuss how regulatory and legal considerations influence market entry strategies. *(3 marks)*

OR

8 (Case Study):

A startup wants to create eco-friendly packaging solutions.

- (a) Identify their potential competitors and suggest profiling methods. *(2 marks)*
- (b) Conduct a SWOT analysis for their business idea. *(2 marks)*
- (c) Propose a pricing strategy based on market research. *(2 marks)*

9 (Descriptive):

- (a) What is customer needs assessment, and how does it help in product development? *(3 marks)*
- (b) Explain the significance of competitive analysis in creating a differentiation strategy. *(3 marks)*

OR

10 (Case Study):

A food-tech company plans to launch a subscription-based meal delivery service.

- (a) Describe how they can profile their target customers. *(2 marks)*
- (b) Suggest ways to validate their market assumptions. *(2 marks)*
- (c) Recommend strategies for effective communication and messaging. *(2 marks)*

Module-III: Business Plan Preparation

Total Marks: 30

Duration: As per exam schedule

PART A: Short Answer Questions

(Answer all questions. Each question carries 3 marks.)

(6 x 3 = 18 Marks)

1. Define *business plan* and its significance for startups.
2. List the components of a marketing and sales strategy in a business plan.
3. What is risk management, and why is it important?
4. Discuss the purpose of financial projections in a business plan.
5. Explain the role of iterative development in prototype creation.
6. What are the benefits of quality assurance in prototype development?

PART B: Descriptive and Case Study Questions

(Answer one question from each set. Each question carries 6 marks.)

(2 x 6 = 12 Marks)

7 (Descriptive):

- (a) Discuss the key elements of a product/service description in a business plan. *(3 marks)*
- (b) Explain the steps involved in preparing a prototype development plan. *(3 marks)*

OR

8 (Case Study):

A wearable tech startup wants to create a fitness tracking device.

- (a) Develop an operations plan, including resource allocation. *(3 marks)*
- (b) Identify key risks and propose mitigation strategies. *(3 marks)*

9 (Descriptive):

- (a) Explain how market analysis informs a business plan. *(3 marks)*
- (b) Discuss the importance of documentation and version control in prototype development. *(3 marks)*

OR

10 (Case Study):

A renewable energy company is planning to launch a wind energy solution for urban use.

- (a) Suggest a marketing strategy for the product. *(2 marks)*
- (b) Recommend a financial projection for their business plan. *(2 marks)*
- (c) Describe a feedback loop for improving the product. *(2 marks)*

Module-IV: Prototype Development

Total Marks: 30

Duration: As per exam schedule

PART A: Short Answer Questions

(Answer all questions. Each question carries 3 marks.)

(6 x 3 = 18 Marks)

1. Define the phases of prototype development.
2. What are the key components of a stakeholder engagement strategy?
3. Explain the role of testing in prototype development.
4. How can iterative development improve a prototype?
5. Discuss the significance of mentor engagement in startup growth.
6. What is the importance of engaging investors during prototype development?

PART B: Descriptive and Case Study Questions

(Answer one question from each set. Each question carries 6 marks.)

(2 x 6 = 12 Marks)

7 (Descriptive):

- (a) Describe the role of technical specifications in prototype development. *(3 marks)*
- (b) Discuss methods for engaging stakeholders during product development. *(3 marks)*

OR

8 (Case Study):

A healthcare startup is designing a wearable device to monitor blood sugar levels.

- (a) Propose a prototype development timeline. *(2 marks)*
- (b) Suggest ways to test and ensure quality assurance for the prototype. *(2 marks)*
- (c) Recommend methods to secure funding from investors. *(2 marks)*

9 (Descriptive):

- (a) Explain the importance of resource allocation in prototype development. *(3 marks)*
- (b) Discuss how feedback from partners and customers can refine a prototype. *(3 marks)*

OR

10 (Case Study):

An IoT company is creating a smart home automation system.

- (a) Develop a strategy for engaging early adopters and collecting feedback. *(2 marks)*
- (b) Propose a differentiation strategy for their product in the market. *(2 marks)*
- (c) Suggest methods for maintaining version control during development. *(2 marks)*