

GUJARAT TECHNOLOGICAL UNIVERSITY

BE-6 SEMESTER – OLD PAPER – S22 TO W25 – QUESTION BANK

Subject Name & Code:

PRODUCT DEVELOPMENT AND ENTREPRENEURSHIP- 3161916

Unit 1: Product Development Processes

Repeated Questions:

1. **Explain the characteristics of successful product development. (07 Marks)**
 - (Summer 2025 - Q1c)
 - (Winter 2024 - Q1c)
 - (Summer 2023 - Q1b, 04 Marks)
 - (Summer 2024 - Q1a, 03 Marks)
2. **Describe briefly the phases of product life cycles. (04/07 Marks)**
 - (Summer 2025 - Q3c, 07 Marks)
 - (Winter 2024 - Q2b, 04 Marks)
 - (Summer 2023 - Q2c, 07 Marks)
 - (Winter 2022 - Q1b)
3. **Discuss the challenges in Product development. (07 Marks)**
 - (Summer 2024 - Q1c)
 - (Summer 2025 - Q3b, 04 Marks)
4. **What is product development? Give examples. (03 Marks)**
 - (Winter 2024 - Q1b)
 - (Summer 2023 - Q1a)
5. **Write advantages of Reverse Engineering. (03 Marks)**
 - (Summer 2022 - Q1b)
 - (Winter 2024 - Q1a)

Other Important Questions:

1. **Differentiate the managerial and entrepreneur approach. (03/04 Marks)**
 - (Winter 2025 - Q1a, 03 Marks)
 - (Summer 2025 - Q1b, 04 Marks)
2. **Write a detailed short Note on Product life cycle. (04 Marks)**
 - (Winter 2025 - Q1b)
3. **Explain characteristics of product development process. (07 Marks)**
 - (Winter 2025 - Q1c)
4. **List out challenges face by product development process. (03 Marks)**
 - (Winter 2025 - Q2a)
5. **Explain the different phases of the generic product development process. (07 Marks)**
 - (Summer 2025 - Q1c)
6. **Explain Reverse Engineering and Redesign Product development Processes. (07 Marks)**
 - (Summer 2023 - Q1c)
7. **Discuss Product life cycles. (04 Marks)**
 - (Summer 2024 - Q1b)
8. **Define product planning. Explain the product planning process in detail. (07 Marks)**
 - (Winter 2022 - Q1c)
9. **List the various phases in product development process and explain all in detail. (07 Marks)**
 - (Winter 2023 - Q1c)
10. **What is Product life cycle? Explain each stage with example. (04 Marks)**

(Winter 2023 - Q1b)

11. Explain the following: a) Product Life Cycle... (04 Marks)

(Winter 2023 - Q4b)

Unit 2: Product Planning and Customer Need

Repeated Questions:

1. **Why customer need is very important for product development process? (03 Marks)**
 - (Summer 2022 - Q2a)
 - (Winter 2024 - Q2a)
2. **Explain opportunity identification process. (07 Marks)**
 - (Summer 2022 - Q3a, 07 Marks) *[Note: Appears as Q3(a) under OR section with 07 marks]*
 - (Winter 2024 - Q2c)
3. **Explain the articulated use methods for interviewing the customers, by taking suitable examples. (07 Marks)**
 - (Summer 2025 - Q2c)
 - (Summer 2022 - Q2b, 04 Marks)
4. **Explain methods used to determine customer need importance. (07 Marks)**
 - (Summer 2024 - Q2c)
 - (Winter 2022 - Q2 OR c)
5. **Explain like-dislike method to conduct interview. (07 Marks)**
 - (Summer 2024 - Q2 OR c)
 - (Summer 2023 - Q2a, 03 Marks)

Other Important Questions:

1. **Justify the statement "Allocate Resources and Plan Timing plays significant role for product planning". (04 Marks)**
(Winter 2025 - Q2b)
2. **Explain the common customer needs which should be known. (07 Marks)**
(Winter 2025 - Q2c)
3. **Explain the Importance of elements in product planning process. (07 Marks)**
(Winter 2025 - Q2 OR c)
4. **Discuss concept generation process. (03 Marks)**
(Summer 2022 - Q1a)
5. **What is affinity diagram? Draw an affinity diagram with a suitable example. (07 Marks)**
(Summer 2022 - Q2c)
6. **Explain the stepwise procedure of the product planning process. (07 Marks)**
(Summer 2025 - Q2 OR c)
7. **Explain the different types of customer needs. (04 Marks)**
(Summer 2025 - Q3b)
8. **Describe the various methods used to determine customer need importance. (07 Marks)**
(Winter 2024 - Q2 OR c)
9. **Which are different types of customer needs? (04 Marks)**
(Summer 2023 - Q2b)
10. **How to prioritise the opportunities? (03 Marks)**
(Summer 2024 - Q2a)
11. **Why affinity diagrams are used for product planning? (03 Marks)**
(Summer 2024 - Q3 OR a)
(Winter 2022 - Q2a)
12. **Types of methods for Generating New Ideas (03 Marks)**
(Winter 2023 - Q2a)
13. **Define the term: (i) Function and worth (ii) Economic value and Aesthetic value (04 Marks)**
(Winter 2023 - Q2b)
14. **Write and discuss the different survey formats in concept testing process with example (07 Marks)**
(Winter 2023 - Q2c)
15. **Write short note on product planning. (07 Marks)**

(Winter 2023 - Q2 OR c)

16. Which are the different Sources of New Ideas (03 Marks)

(Winter 2023 - Q3a)

Unit 3: Product Configuration and Design for Function

Repeated Questions:

1. **Write importance of designing for maintenance. (04 Marks)**
 - (Summer 2022 - Q3b)
 - (Winter 2024 - Q3b)
 - (Summer 2023 - Q3b)
 - (Summer 2024 - Q3 OR b)
2. **Explain virtual prototyping with an example of CAD. (07 Marks)**
 - (Summer 2022 - Q3c)
 - (Winter 2024 - Q3c)
3. **Write advantages of 3D Printing. (03 Marks)**
 - (Summer 2022 - Q3 OR a)
 - (Winter 2024 - Q3 OR a)
 - (Summer 2024 - Q3b, 04 Marks)
4. **What is product modularity? Explain various types of product modularity. (07 Marks)**
 - (Summer 2025 - Q5c)
 - (Winter 2024 - Q3 OR c)
 - (Summer 2024 - Q3c)
 - (Winter 2022 - Q3c)
5. **How is the design for assembly (DFA) methodology important to minimize the cost of assembly? Explain briefly. (04/07 Marks)**
 - (Winter 2024 - Q3 OR b)
 - (Winter 2022 - Q3b)

Other Important Questions:

1. **What is Module heuristics? State its applications. (03 Marks)**
(Winter 2025 - Q3a)
2. **What is functional analysis in engineering? (03 Marks)**
(Summer 2022 - Q3a)
3. **Explain guidelines for evaluation of the Overall Assembly. (07 Marks)**
(Summer 2022 - Q3c)
4. **Name type of Product Modularity. (04 Marks)**
(Summer 2022 - Q3 OR b)
5. **What is a Function Family Tree (FFT)? Explain it. (03 Marks)**
(Summer 2025 - Q2a)
6. **Enlist the advantages of 3D printing. (04 Marks)**
(Summer 2025 - Q2b)
7. **Explain the types of functions of any product. (03 Marks)**
(Summer 2025 - Q3a)
8. **Enlist the different types of maintenance operations in the industry. (03 Marks)**
(Summer 2025 - Q3 OR a)
9. **Explain the General Guideline for optimizing the number of parts in the design. (07 Marks)**
(Summer 2025 - Q3 OR c)
10. **Enlist the steps required to target the product specifications. (03 Marks)**
(Winter 2024 - Q3a)
(Winter 2022 - Q3a)
11. **Explain free- form fabrication method (additive manufacturing) as a prototyping technique. (07 Marks)**
(Summer 2023 - Q3c)
(Summer 2024 - Q3 OR c)
12. **Which are the steps to establish the product architecture? (03 Marks)**
(Summer 2023 - Q3 OR a)
13. **Briefly describe 3- d printing technology. Write its advantages. (07 Marks)**

- (Summer 2023 - Q3 OR c)
14. **List the steps to establish the product architecture. (03 Marks)**
(Summer 2024 - Q3a)
15. **Enlist the steps required to target the product specifications. (03 Marks)**
(Winter 2022 - Q3a)
16. **Explain briefly the concept of reverse engineering for product development. (04 Marks)**
(Winter 2022 - Q2b)
17. **How the manufacturing costs of product are decided in DFM methodology? Explain in detail. (07 Marks)**
(Winter 2022 - Q2c)
18. **What is design for maintainability of the product? (03 Marks)**
(Winter 2022 - Q3 OR a)
19. **Describe the function analysis approach used for product development. (07 Marks)**
(Winter 2022 - Q3 OR c)
20. **Definition: (i) Political Value and Social Value (ii) Plan value and Time value (04 Marks)**
(Winter 2023 - Q3b)
21. **How industrial design is important to a product? Also write its aesthetic needs (07 Marks)**
(Winter 2023 - Q3c)
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Unit 4: Product Architecture and virtual Product Prototyping

Repeated Questions:

No questions were repeated verbatim across the provided papers for this specific unit. The topic of 3D Printing/Additive Manufacturing/Product Modularity is covered heavily in Unit 3.

Other Important Questions:

1. **What is product modularity? Explain the modularity design in brief. (03 Marks)**
(Winter 2025 - Q4a)
 2. **Write advantages of 3D printing. (03 Marks)**
(Winter 2025 - Q4 OR a)
 3. **Explain free-form fabrication method (additive manufacturing) as a prototyping technique. (07 Marks)**
(Winter 2022 - Q3 OR b)
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Unit 5: Entrepreneurship: Concept, knowledge and skills requirement

Repeated Questions:

1. **Differentiate between managerial vs. entrepreneurial approach. (04/07 Marks)**
 - (Summer 2025 - Q1b, 04 Marks)
 - (Winter 2024 - Q4c, 07 Marks)
 - (Summer 2023 - Q4b, 04 Marks)
 - (Summer 2024 - Q4b, 04 Marks)
 - (Winter 2022 - Q4b, 04 Marks)
2. **Explain the role of entrepreneurship in economic development. (04/07 Marks)**
 - (Winter 2025 - Q3b, 04 Marks)
 - (Summer 2022 - Q4b, 07 Marks)
 - (Winter 2024 - Q4b, 04 Marks)
 - (Summer 2023 - Q4c, 07 Marks)
 - (Summer 2024 - Q4c, 07 Marks)
 - (Winter 2022 - Q4b, 04 Marks)
 - (Summer 2025 - Q4 OR C, 07 Marks)
3. **Enlist characteristics required for successful entrepreneurs. (03 Marks)**
 - (Summer 2025 - Q4a)
 - (Summer 2024 - Q4a)
 - (Winter 2022 - Q4a)
4. **Define Entrepreneur and Entrepreneurship. (03 Marks)**
 - (Summer 2022 - Q4a)
 - (Winter 2024 - Q4 OR a)
5. **Discuss knowledge and skills required for successful entrepreneur. (07 Marks)**
 - (Summer 2022 - Q4c)
 - (Summer 2023 - Q4a, 03 Marks)
 - (Summer 2024 - Q4 OR b, 04 Marks)

Other Important Questions:

1. **Explain the characteristics required for successful entrepreneur. (04 Marks)**
(Winter 2025 - Q3 OR b)
 2. **Explain the Entrepreneurship Process. (04 Marks)**
(Summer 2025 - Q4b)
 3. **Enlist the factors impacting emergence of entrepreneurship. (03 Marks)**
(Winter 2022 - Q4 OR a)
 4. **What do you mean by creative problem solving? (03 Marks)**
(Summer 2022 - Q4 OR a)
(Summer 2024 - Q4 OR a)
 5. **What is the importance of e-commerce technology for entrepreneurs? (07/04 Marks)**
(Summer 2022 - Q4 OR b, 07 Marks)
(Winter 2024 - Q4 OR b, 04 Marks)
 6. **Characteristics of Venture Capital as a source of financing. (03 Marks)**
(Winter 2023 - Q3 OR a)
 7. **Role and Importance of Commercial Banks in India (04 Marks)**
(Winter 2023 - Q3 OR b)
 8. **Write full name (i) SEBI (ii) EPFO (iii) NBFC (03 Marks)**
(Winter 2023 - Q4a)
 9. **What is an inventive problem? (03 Marks)**
(Winter 2023 - Q4 OR a)
 10. **How Brainstorming plays a vital role in generating new Ideas? (04 Marks)**
(Winter 2023 - Q4 OR b)
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Unit 6: Starting the venture

Repeated Questions:

1. **Explain the Five competitive force models for industry analysis. (04/07 Marks)**
 - (Winter 2025 - Q3 OR c, 07 Marks)
 - (Summer 2025 - Q4b, 04 Marks)
2. **What is feasibility study? Explain financial feasibility and technical feasibility by taking suitable example. (07 Marks)**
 - (Winter 2025 - Q3c)
 - (Summer 2025 - Q4c)
3. **Explain technical and financial feasibility. (07 Marks)**
 - (Summer 2024 - Q4 OR c)

Other Important Questions:

1. **What is business plan? Enlist the key component of business plan. (03 Marks)**
(Winter 2025 - Q3 OR a)
 2. **What is industry analysis? Explain the porters five force model for industry analysis. (07 Marks)**
(Winter 2025 - Q3 OR c)
 3. **Why feasibility study is required? Explain different types of feasibility studies in brief. (07 Marks)**
(Summer 2025 - Q4c)
 4. **What are the contents of the business plan? (03 Marks)**
(Summer 2025 - Q4 OR a)
 5. **Define: Market feasibility, Technical/operational feasibility, Financial feasibility. (03 Marks)**
(Summer 2023 - Q4 OR a)
 6. **Explain presentation of business plan to investors. (04 Marks)**
(Summer 2023 - Q4 OR b)
(Summer 2024 - Q5b)
 7. **Enlist important parameters of feasibility study for a business. (07 Marks)**
(Summer 2022 - Q4 OR c)
 8. **Describe in detail the importance of feasibility study for a new venture. (04 Marks)**
(Winter 2024 - Q5 OR b)
(Winter 2022 - Q5b)
 9. **Enlist the necessary steps have to be followed by an entrepreneur while drawing a business plan. (04 Marks)**
(Winter 2022 - Q5 OR b)
 10. **What are the inventive problems? Also explain the five levels of solution. (07 Marks)**
(Winter 2023 - Q3 OR c)
 11. **Explain the different types of product development project and give the reasons for poor development planning. (07 Marks)**
(Winter 2023 - Q4c)
 12. **Discuss the patent search process briefly and the give the details contained in patent by giving the patent sample. (07 Marks)**
(Winter 2023 - Q4 OR c)
 13. **Explain the importance of different feasibility study for any Organization to start new business. (04 Marks)**
(Winter 2023 - Q5 OR b)
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Unit 7: Functional plans

Repeated Questions:

1. **Write steps in preparing a marketing plan with appropriate flow chart. (07 Marks)**
 - (Summer 2022 - Q5c)
 - (Winter 2024 - Q5c)
 - (Summer 2023 - Q5c)
2. **Write short note on break even analysis. (04 Marks)**
 - (Winter 2025 - Q5b)
 - (Summer 2022 - Q5 OR b)
 - (Summer 2025 - Q5a, 03 Marks)
3. **Discuss working capital. (03 Marks)**
 - (Summer 2022 - Q5a)
 - (Winter 2024 - Q5 OR a)
4. **Why man power planning is important in entrepreneurial business. (04 Marks)**
 - (Summer 2022 - Q5b)
 - (Winter 2024 - Q5b)

Other Important Questions:

1. **Enlist the steps for preparing market plan. (03 Marks)**
(Winter 2025 - Q5a)
2. **What is Performa income statement? Explain Performa cash flow and balance sheet in financial plan. (07 Marks)**
(Winter 2025 - Q5c)
3. **How the financial planning can be done by entrepreneur for the new venture? (03 Marks)**
(Winter 2024 - Q5a)
(Winter 2022 - Q5 OR a)
4. **What is Performa balance sheet? How the breakeven analysis is useful for new venture? (07 Marks)**
(Winter 2024 - Q4 OR c)
(Winter 2022 - Q4 OR c)
5. **How the manpower planning is important for entrepreneur? (03 Marks)**
(Winter 2022 - Q5a)
6. **Explain manpower planning and Financial plan for business. (04 Marks)**
(Summer 2023 - Q5b)
7. **How to carry marketing research for the new venture? Discuss the steps in preparing marketing plan. (07 Marks)**
(Summer 2023 - Q5c)
8. **Write the steps for marketing research for the new venture. (03 Marks)**
(Summer 2024 - Q5a)
9. **Discuss for Financial plan: cash budget, working capital and break even analysis. (07 Marks)**
(Summer 2024 - Q5c)
10. **How the marketing plan for the new venture can be prepared? Describe with detail steps. (07 Marks)**
(Winter 2022 - Q4c)
11. **Why marketing research is required for the new venture? (03 Marks)**
(Summer 2025 - Q5a)
12. **What is additive manufacturing? Explain it briefly. (04 Marks)**
(Summer 2025 - Q5b)
13. **Define break even analysis. Explain it with sketch. (03 Marks)**
(Summer 2023 - Q5a)
14. **Write a short note on franchising. (03 Marks)**
(Summer 2022 - Q5 OR a)

(Summer 2023 - Q4 OR c, 07 Marks)

15. Differentiate between licensing and franchising. (04 Marks)

(Winter 2025 - Q5 OR b)

(Summer 2025 - Q5b)

Unit 8: Issues related to Product development and Entrepreneurship

Repeated Questions:

1. **Explain briefly 1) Trademark 2) Copyright and 3) Patent. (07 Marks)**
 - (Summer 2025 - Q5c)
 - (Summer 2023 - Q5 OR a, 03 Marks for definitions)
2. **What are the objectives of Intellectual property rights? (03 Marks)**
 - (Summer 2025 - Q1a)
3. **Write a short note on legal issues related to product development and entrepreneurship. (07 Marks)**
 - (Winter 2025 - Q5 OR c)

Other Important Questions:

1. **Answer the following questions:**
 - 1) Which one is NOT a part of 4Ps (Market Mix) a) Product b) Price c) Promotion 4) Packaging
 - 2) Intellectual property right (IPR) in India covers a) Patents b) Copyrights c) Trademarks 4) All of the above
 - 3) Assign True (T) or False (F) for following statement. "Patent is granted for innovation or improvement in invention" (03 Marks)
(Winter 2025 - Q5 OR a)
2. **Define and explain trademark and copyright. (07 Marks)**
(Summer 2022 - Q5 OR c)
3. **Write a short note on intellectual property rights. (07 Marks)**
(Summer 2023 - Q5 OR c)
4. **What do you mean by intellectual property rights? (03 Marks)**
(Summer 2024 - Q5a)
5. **What is patent? Explain in detail about utility patents. (04/07 Marks)**
(Summer 2024 - Q5b, 04 Marks)
(Winter 2022 - Q5c, 07 Marks)
6. **Give a case study or example with reference to trade secrets. (07 Marks)**
(Summer 2024 - Q5c)
7. **Describe in details the terminology related with intellectual property rights (i) trademarks (ii) trade secrets (iii) copyrights. (07 Marks)**
(Winter 2024 - Q5 OR c)
8. **Describe in details the terminology related with intellectual property rights (i) trademarks (ii) trade secrets (iii) franchising. (07 Marks)**
(Winter 2022 - Q5 OR c)
9. **Explain the following: ... b) IPR ... (04 Marks)**
(Winter 2023 - Q4b)
10. **Explain the following (a) Overhead cost (b) TRIZ (c) Market Research. (03 Marks)**
(Winter 2023 - Q5 OR a)
11. **List the causes of failure of new product and justify the statement "Incorrectly placed, priced and advertised new product generally leads to failure in market." (07 Marks)**
(Winter 2023 - Q5 OR c)
