6. Designing to Codes and Standards

51. Why are engineering codes and standards important?
    a) To increase production costs
    b) To ensure safety, reliability, and consistency
    c) To slow down product development
    d) To create unnecessary regulations
52. Which of the following is a well-known engineering standard organization?
    a) FIFA
    b) IEEE
    c) NBA
    d) WHO
53. What happens if a product does NOT comply with industry standards?
    a) It becomes more competitive
    b) It may face legal and safety issues
    c) It gains better market acceptance
    d) It gets free certification
54. ISO stands for:
    a) International Standards Organization
    b) Industrial Safety Operations
    c) Integrated Systems Optimization
    d) Internal Safety Ordinance
55. Which standard is commonly used in electrical engineering?
    a) FDA
    b) IEEE 802
    c) WHO
    d) ISO 9001
56. The purpose of a safety standard is to:
    a) Increase the cost of design
    b) Improve product safety and usability
    c) Limit innovation
    d) Avoid legal compliance
57. ANSI is an organization that:
    a) Creates fictional design standards
    b) Develops and approves engineering standards in the USA
    c) Focuses on medical research
    d) Regulates international trade
58. What is the primary focus of ISO 9001?
    a) Environmental safety
    b) Quality management systems
    c) Aerospace regulations
    d) Wireless communications

59. Why should designers follow engineering codes?
    a) To meet legal requirements
    b) To increase product failures
    c) To avoid product testing
    d) To make products less reliable
60. Which engineering field heavily relies on ASME standards?
    a) Fashion design
    b) Mechanical engineering
    c) Marketing
    d) Fine arts

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7. Societal Considerations in Engineering Design

61. What is an important societal factor in design?
    a) User accessibility
    b) Increasing production time
    c) Ignoring environmental concerns
    d) Reducing product quality
62. Sustainable design aims to:
    a) Minimize environmental impact
    b) Increase waste production
    c) Avoid material recycling
    d) Ignore renewable resources
63. How can engineering designs be made more inclusive?
    a) By considering diverse user needs
    b) By limiting accessibility
    c) By ignoring societal concerns
    d) By making products complex
64. Ethical engineering design focuses on:
    a) Maximizing harm to users
    b) Ensuring fairness, safety, and responsibility
    c) Ignoring regulations
    d) Eliminating user feedback
65. What is the role of human factors in design?
    a) To improve usability and ergonomics
    b) To ignore customer satisfaction
    c) To reduce product performance
    d) To focus only on aesthetics
66. Which of these is a sustainable material choice?
    a) Single-use plastics
    b) Biodegradable polymers

c) Non-recyclable metals
d) Lead-based coatings

67. A socially responsible product design should:
    a) Ignore cultural differences
    b) Consider environmental impact
    c) Increase waste production
    d) Be designed only for elite users
68. Universal design ensures:
    a) Products are accessible to all
    b) Limited usability for specific groups
    c) Higher costs for users
    d) Increased complexity in manufacturing
69. Why should companies design eco-friendly products?
    a) To increase waste production
    b) To reduce resource consumption
    c) To decrease product value
    d) To ignore regulations
70. Ethical considerations in engineering include:
    a) Fair labor practices
    b) Ignoring safety guidelines
    c) Producing unreliable products
    d) Avoiding quality control

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8. Generic Product Development Process

71. What is the first step in the generic product development process?
    a) Prototyping
    b) Identifying customer needs
    c) Mass production
    d) Testing
72. What is the main goal of concept development?
    a) To generate innovative product ideas
    b) To start production immediately
    c) To skip market research
    d) To increase product complexity
73. Which phase involves defining technical specifications?
    a) Idea screening
    b) Concept development
    c) Testing
    d) Production
74. Why is feasibility analysis important?
    a) To determine if a product can be successfully developed

b) To avoid user feedback
c) To increase production costs
d) To ignore market trends

75. What is the purpose of product testing?
    a) To identify defects and improvements
    b) To increase production speed
    c) To ignore customer feedback
    d) To limit product development
76. Which stage follows concept selection?
    a) Testing
    b) Detailed design
    c) Market launch
    d) Production
77. Why is iterative design important?
    a) It allows continuous improvement
    b) It reduces user satisfaction
    c) It limits design flexibility
    d) It avoids product refinement
78. What role does prototyping play in development?
    a) Testing product viability
    b) Ignoring potential issues
    c) Increasing production risks
    d) Avoiding user engagement
79. What comes after market launch?
    a) Concept development
    b) Customer feedback and improvements
    c) Redesigning from scratch
    d) Ignoring product performance
80. Why is documentation crucial in product development?
    a) To maintain records and ensure quality
    b) To increase project complexity
    c) To avoid standardization
    d) To reduce design efficiency

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9. Market Research and Planning for Products

81. What is the purpose of market research?
    a) To understand customer needs and trends
    b) To ignore competition
    c) To increase development costs
    d) To avoid product testing

82. Market segmentation divides customers based on:
    a) Shared characteristics and needs
    b) Random selection
    c) Government policies
    d) Manufacturing processes
83. Why is competitor analysis important in market research?
    a) To identify gaps and opportunities
    b) To avoid innovation
    c) To ignore market trends
    d) To increase production costs
84. What type of market research uses customer surveys?
    a) Primary research
    b) Secondary research
    c) Experimental research
    d) Theoretical research
85. A product is more likely to succeed if:
    a) It meets market demands
    b) It is designed without feedback
    c) It has high costs but no unique features
    d) It ignores competition
86. A company wants to expand its reach by targeting new customer groups. This is an example of:
    a) Market segmentation
    b) Random marketing
    c) Ignoring customer needs
    d) Overproduction
87. Which method is used to test a product before mass production?
    a) Beta testing
    b) Final launch
    c) Direct sales
    d) Price reduction
88. What is an essential factor when planning for a new product?
    a) Customer demand
    b) Ignoring market needs
    c) Avoiding industry trends
    d) Increasing costs without justification
89. Why is brand positioning important?
    a) To differentiate a product from competitors
    b) To increase production risks
    c) To avoid marketing strategies
    d) To ignore customer experience
90. A company conducting focus groups is engaging in:
    a) Primary market research
    b) Secondary market research

c) Random surveys
d) Price manipulation