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Question Paper Code:U9772

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Open Elective

Mechanical Engineering

21UME972 - PRODUCT LIFE CYCLE MANAGEMENT

(Common to All branches)

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. During which phase of the product development life cycle is the product typically manufactured at scale for the market? CO1- U
(a) Conceptualization (b) Design
(c) Prototype (d) Production
2. Which product development methodology is characterized by a linear and sequential approach with distinct phases? CO1- U
(a) Agile (b) Lean (c) Waterfall (d) Scrum
3. In PLM, what does the "BOM" acronym stand for? CO2- U
(a) Bill of Materials (b) Business Operations Management
(c) Best Order Management (d) Batch Order Management
4. Which feature in PDM software ensures that only authorized individuals have access to specific product data and documents? CO2- U
(a) Role-based access control (b) Social media sharing
(c) Supplier collaboration (d) Email notifications
5. What is the primary function of Autodesk Vault? CO3- U
(a) 3D modeling (b) Document storage and version control
(c) Project scheduling (d) Customer relationship management (CRM)

6. What does Windchill's version control feature ensure? CO3- U
- (a) Accurate tracking of product data versions
 - (b) Environmental sustainability of products
 - (c) Real-time collaboration on design sketches
 - (d) Integration with Enterprise Resource Planning (ERP) systems
7. What is the primary purpose of developing a PLM vision within an organization? CO2- U
- (a) to create detailed product designs
 - (b) expanding the product portfolio
 - (c) decreasing employee training costs
 - (d) increasing office space utilization
8. In which sectors or industries is PLM commonly used to streamline product development and management processes? CO2- U
- (a) Agriculture and farming
 - (b) Healthcare and medical services
 - (c) Manufacturing, aerospace, automotive, and consumer goods
 - (d) Event planning and hospitality
9. What is the primary role of CAD in PLM? CO2- U
- (a) Managing human resources
 - (b) Tracking sales and marketing data
 - (c) Facilitating the design and modeling of products
 - (d) Automating financial transactions
10. What does SLM stand for? CO1- U
- (a) Social Learning Management
 - (b) Strategic Logistics Management
 - (c) Service Lifecycle Management
 - (d) Software Licensing Model

PART – B (5 x 2= 10 Marks)

11. Compare PDM with PLM CO1- U
12. Mention the five categories of utility functions. CO1- U
13. List the benefits of document management. CO2- U
14. Mention any four areas of benefit of the PLM CO2- U
15. Express the merits of data base integration. CO2- U

PART – C (5 x 16= 80 Marks)

16. (a) Describe briefly the generic phases of PLC and explain the impact of PLM. CO1- U (16)
- Or
- (b) Explain the characteristics of collaborative product commerce CO1- U (16)
17. (a) Discuss product data management and reason for implementing PDM in an organization. CO2- U (16)
- Or
- (b) Explain the concepts of the utility functions in the PDM system. CO2- U (16)
18. (a) How does Oracle Agile PDM facilitate efficient data management in an Agile product development environment? CO3- U (16)
- Or
- (b) How can SAP PLM be leveraged to optimize resource allocation and budgeting for projects within the PLM domain, leading to cost-effective and efficient product lifecycles? CO3- U (16)
19. (a) Elucidate the foundational principles and outcomes derived from the ten-step PLM methodology. CO4- U (16)
- Or
- (b) Enumerate the steps involved in PLM initiative. CO4- U (16)
20. (a) Analyze the incorporation of the PLM system with other software applications, supported by relevant examples. CO5- Ana (16)
- Or
- (b) Produce a case study that showcases a real-world application of an Enterprise Resource Planning system to optimize the processes of Product Lifecycle Management CO5- Ana (16)

