USN :

CMR Institute of Technology, Bangalore
DEPARTMENT OF MECHANICAL ENGINEERING
I - INTERNAL ASSESSMENT

Semester: 8-CBCS 2017
Subject: PRODUCT LIFE CYCLE MANAGEMENT (17ME835)
Faculty: Mr Cyril S

Date: 22 May 2021
Time: 11:00 AM - 12:00 PM
Max Marks: 50

Answer All Questions

Q.No		Marks	CO	PO	BT/CL
1	Explain different phases of PLCM with neat sketch.	15	CO1	PO1	L1
2	Explain Benefits and stratagies of PLCM.	15	CO1	PO1	L1
3	Explain the Need and Applications of PLCM in industry and briefly explain DFX.	20	CO1	PO2	L1

[redacted]

2) The benefits are :-

- PLM provides entire information about the product, right from its conception to disposal. PLM thus gives an insight into critical processes.
- PLM speeds up production process thereby minimizing quick launch of products.
- Helps company to improve effectiveness, efficiency and control throughout entire life cycle.
- Better quality, reduced scrap and product related cost and greater productivity leading to improved profits.
- Savings throughout the complete integration of engineering workflows.
- PLM helps to capture customer requirements in a better way
- Prevents future product failures through knowledge of past failures leading to greater efficiency.
- Provides an ability to quickly identify potential sales opportunities and revenue contributions.

The strategies of PCM are

- Change product :- New and improved version of product can be launched
- Change price :- Price can be lowered to sell the product
- Change place :- Product can be sold in diff country where need is greater
- Change promotions :- Diff methods of sales promotion techniques giving new image.
- Change packaging + name :- If product has suffered from bad publicity and sales are falling, change name of product.

1) Different phases of PLM are :-

(i) Create (Conceive, Plan & Specify) :-

- The first phase starts with product requirement analysis and planning.
- The major technical parameter of product are defined accordingly and mapped into specifications
- Must ensure that all components that make up product and fully defined accordingly.

(ii) Design (Define, Test, Validate)

- Based on conceptualization of product
- Takes into account details of how perform its intended function in an efficient, safe & reliable manner.

(iii) Build (Procure, manufacture & Assemble)

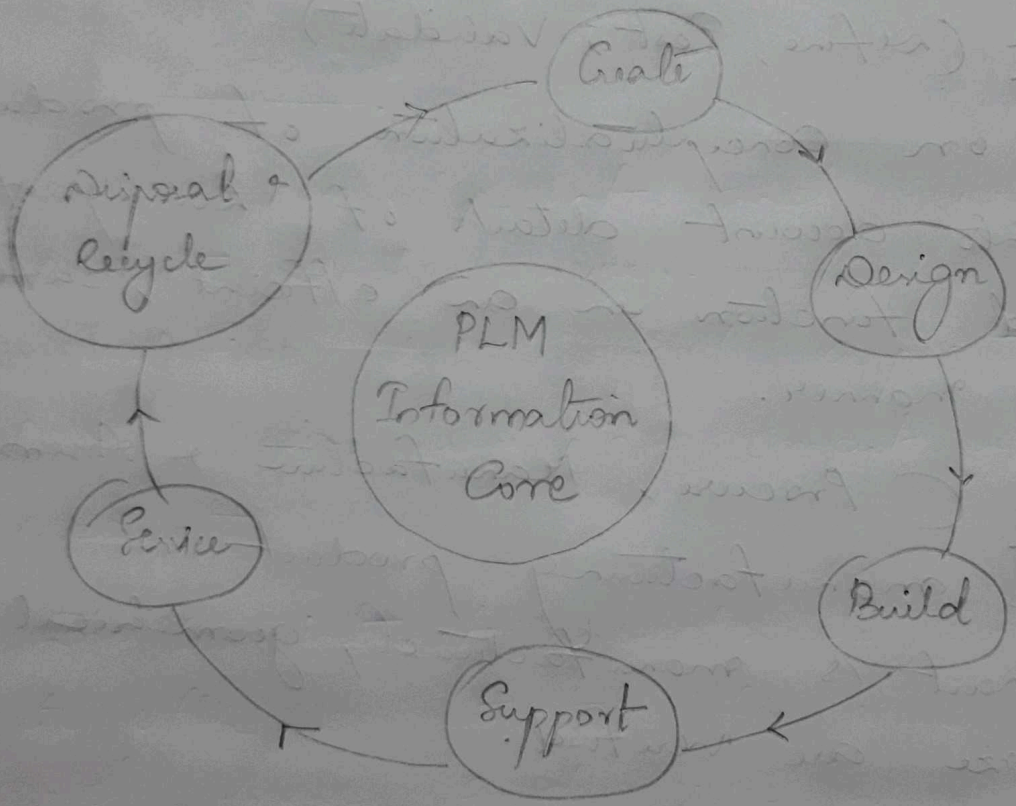
- Involves manufacturing product
- One part is manufactured, geometrical form and size are verified.

(iv) Support (Promote, Market, Sell)

- Next phase is sales and distribution activities. Supporting team builds awareness of product among potential customers through advertisement, media etc.

(*) Service (Use, Maintain, Service & disposal)

- Final phase involves service and support information for repair and maintenance as well as waste management & recycling information.
- There is end of life for every product whether it is disposal or destruction of material objects or information, which needs to define and strategize accordingly.



3) Need for PLM

To meet challenges of todays global business development, companies with complex products and process need to manage data & information of the product throughout the life cycle. maintaining a database containing large amount of information and making this information to be available and accessible to the right person is a tedious task. Hence it becomes necessary that business process,

engineering, software development etc that are a part of an organization's operation need a better model to support product development. Product life cycle management is adopted to serve this purpose. PLM manages data, people, business process etc to a product thereby facilitating better communication among those working with project.

Applications

- Enables development and support of new products and services.
- Redefines technological aspects and processes in developing smart or intelligent products
- Enables internet, world wide web and grid to offer opportunities for new products and services and new ways to develop sell and support products.
- Helps to maximize business enjoat in global market.
- With PLM, there is an increase in no. of potential customers.

DFX

To simplify the design and to reduce the total no. of parts.

Design for excellence are terms and expansions used interchangeably in the existing literature where the x in design for x is available which can hand one of many possible values. This gives rise to terms of design for manufacturing (DFM), design for inspection (DFI), design for variability (DFV) In many field large scale integration (VLSI) x may represent several traits features like power, manufacturability, cost yield & reliability.