**Q1. Discuss in brief the concepts of "Product Development" and "Product Design".**

**Discuss with an example, if any possible, how can the concept of "Kaizen" be applied**

**and implemented in a Restaurant setup.**

**Answer.**

Product development is a major activity followed by various sophisticated methods and activities. As stated by Edison, product development follows Lofty goals, Right to left Process, Structure, and fluidity. The new product strategy of the organisation is decided on the basis of organisational capabilities and resources.

Following are the processes followed for product development:

1. Determining needs : The search for ideas starts based on the ‘new product’ strategy, ideas that fit in with the strategy have to be identified.

2. Specification : These are the basis of concept generation, concept has to be evaluated against technical and economical data. The concept undergo screening for identification risks and potential are scrutinized.

3. Concept : Clearing the screening process, preliminary configuration and an introductory analysis is conducted. Under which, best designs are selected and refined and thoroughly evaluated against multiple factors and viewpoints.

4. Preliminary design : At this step further refinement is done and configuration is completed. Errors are omitted and cost is estimated, preliminary parts list and fabrication drawings are prepared.

5. Definitive design : This step involves finalization of designs details and verification. Drawings and production documents are concluded in at this stage.

6. Documentation : This is an extended part of above process which includes documentation.

7. Prototype : A demo model is created for demonstration and project under focus groups for further enhancement of model and product.

8. Test and evaluate : Once the model is finalized and product is prepared it goes under testing session which finds sophisticated bugs and eliminates them for best experience.

9. Solution : Fully functional working prototype of the product is prepared of prototype.

Product design is structuring of component parts or activities so that as a unity they can provide a specified value. Following are the processes of Product design.

1. Product Architecture: It is an engineering function-detailed drawings or specifications are prepared which give dimensions, weights, colours etc. A good design can help designers develop products capable of providing the firm with a competitive advantage.

2. Engineering Economy: It is systematic evaluation of the costs and benefits of proposed technical projects.

3. Identifying waste: This step includes a lot of sub processes such as acquisition cost, repair cost, maintenance cost, operating costs, salvage costs, disposal costs.

Kaizen :

Kaizen means continuous improvement, which is applicable from top to bottom structure of an organisation. Kaizen has certain standard in its capsule which helps an organisation to develop.

In a restaurant setup scenario, certain standards can be set as default to maintain proper service timings, cleanliness, infrastructure and food satisfaction, management can use a user rating scale for continuous and

standardized improvement.

1. Service timings: Once the order is received it is of most importance that order is delivered in time frame of customer expectation. Continuous improvement in delivery time can add significant value to customers choice for reappearing.

2. Cleanliness: Is one of the key aspects of maintainability which can be standardized by user rating scale. It is must to set pre standards for cleanliness so as an aura can be maintained.

3. Infrastructure: Customer demands good infrastructure which can make themselves feel porsche, sophisticated and pleasant. Infrastructure standards are more of architectural decisions that are to be taken so that a customer never feels the same every time they visit the restaurant.

4. Food satisfaction: Satisfaction can be maintained by user rating. Setting and maintaining a standard to maintain user rating is mandatory for customer success. Kaizen also allows a suggestion system which welcomes user to input and out suggestions by which processes can be improved.

**Q2. List down briefly the various inventory management techniques prevalent in the**

**industry. Discuss how some of these techniques would be applicable to a General**

**Store in effective management of their inventories, i.e grocery supplies, etc (assume several inventories of your choice).**

**Answer.**

Inventory management or control is a system which ensures the provision of the required quantity of inventories of required quality at the required time with the minimum amount of capital investment.

Scope of inventory control

1. Size of inventory-determining maximum and minimum levels, establishing time schedules and coordinating sales.

2. Proper storage facility for various operations.

3. Providing reports necessary for supervising overall activity.

Techniques:

1. ABC Analysis:

When the inventory grows large then it becomes essential to have an efficient control over all items of stores. However, comparatively greater care should be given to items of higher value. This technique attempts to relate how the inventory value is concentrated among the individual items. Items are broadly classified as A, B, C.

Category A, includes most important items representing 60% to 70% of the value of stores containing 10 to 15% of items.

Category B, includes less important representing 20 to 25% investment and items.

Category C, includes least important item representing 60 to 70% of stores item representing 10 to 15 % of investment.

Close attention is paid to items falling in category A and the best items of category C. This classification of items is based upon value, usage rate and criticality of items and these variables are given due weightage in categorising the items. ABC implies Always Better Control.

Procedure for ABC analysis:

- The quality of each material expected to be used in a given period should be estimated.

- Money value of the items of materials so chosen should be calculated by multiplying the quantity of each item with the price.

- The items should be re-arranged in the descending order of their values irrespective of quantities.

- A running total of all the values and items will be taken and then the figure so obtained should be converted into percentages of the gross total.

- Small number of first few items may amount to a large percentage of the total value of the items. The management, then will have to take decision as to the percentage of total value or the total number of items which have to be converted by A,B,C categories.

The grocery items such as x amount of cups for Rs. X per piece, y amount of bottles for Rs. y per piece, z amount of plastic boxes for Rs. z per piece, p amount of steel boxes for Rs. p per piece and q amount of rolling cylinder for Rs. q per piece.

X = 10, Y= 20, Z= 30, P = 40, Q = 50

So, total value of grocery in store = x\*x + y\*y + z\*z = value of x (100)+value of y (400)+value of z (900)+value of p(1600)+value of q(2500) = 5500(total)

now, category A includes most important items i.e. “q” & “p” with value of 2500 & 1600 respectively.

category B includes less important items i.e. “z” with value of 900 respectively.

Category C includes least important items i.e. “x” and “y” with value of 100 and 400.

2. VED Analysis:

VED stands for vital, essential and desirable. This type of classification is applicable mostly in the case of spare parts as they don't follow a predictable demand pattern as raw material. In this analysis the categories are made in terms of the importance or criticality of the part to the operation of the plant. If it is very vital, it is given a V classification. If it is not so important it is given D classification. The classification depends on type of machinery involved and one’s own experience, ease of availability of the items etc. For V items a reasonably large quantum of stocks might be necessary, while D items, no stocks is required. If items happens to be in A or B classification, close control should be kept on stock levels, For C items, large quantities may be stored.

The grocery items such as x amount of cups for Rs. X per piece, y amount of bottles for Rs. y per piece, z amount of plastic boxes for Rs. z per piece, p amount of steel boxes for Rs. p per piece and q amount of rolling cylinder for Rs. q per piece. The fastest selling product is “y” and is left with few more pieces, whereas “p” is the slowest selling product and is still in sufficient quantity and x is moderately selling product which about to be finished.

Now, Y is classified as V(vitale), P is classified as D(desirable), where as, X is classified as E(essential).

3. FSND (Fast moving, slow moving, non-moving, dead items)

The basis of classification is the consumption pattern of the component. It is mainly used to control obsolescence. Classification takes into account the pattern of issues from stores. Items classified as S and N require very great attention, especially N items.

The grocery items such as x amount of cups for Rs. X per piece, y amount of bottles for Rs. y per piece, z amount of plastic boxes for Rs. z per piece, p amount of steel boxes for Rs. p per piece and q amount of rolling cylinder for Rs. q per piece. The fastest selling product is “y” and is left with few more pieces, whereas “p” is the slowest selling product and is still in sufficient quantity and “x” is moderately selling product which about to be finished. Product “z” is not in process of selling due to some reasons, whereas product “q” is expired.

Now, according to classification “y” is classified as F, “p” is classified as S, “z” is not selling hence classified as N and “z” is classified as D.

**Q3. Healthcare is one of the top sectors of our country. It is also started to being identified**

**as one of the business functions with many healthcare institutes offering “premium”**

**services. However imparting quality medical services is a challenge for management**

**for organisations from non healthcare expertise. To understand and suggest roadmaps**

**for the same, answer the following concepts.**

**a. What are the 8 building blocks of Total Quality Management? Discuss how can these**

**8 building blocks be incorporated in a typical Hospital setup for the objective of**

**providing quality healthcare.**

**Answer**

The eight building blocks of TQM are:

1. Ethics:

The good and bad in any situation is more of a responsibility of hospital management for providing better healthcare. It is often found in cases that a patient got fatality due to some sort of mismanagement or heavy documentation responsibility which is a sign of bad organisational structure and management.

2. Integrity:

It implies honesty, morals, values, fairness and adherence to the facts and sincerity. Hospitals are frequently charged of conducting thug to customers by proving long list of bills to customers which are not even required, making a customer pay unnecessarily and hence generating profit from it. Hence, it reflects poor integrity concepts among management.

3. Trust:

It is a by product of integrity and signifies the same logic. Customers trust their doctors and treat them as god, which is instead taken advantage of and hence customers are misguided by fear of medical conditions.

4. Training:

Training is a highly productive process especially in medical cases where customers are in serious medical conditions, if in case of unavailability of doctors, staff must be capable of proceeding basic setup for patient relief. It symbolises good staff with great working culture.

5. Teamwork:

The key aspect of business is great teamwork. In case of a medical situation where doctor is unavailable, another doctor shall receive the patient to provide instant relief for time being the other doctor arrives. This working culture helps in customer success which shows good responsible management of hospital.

6. Leadership:

A leader symbolises vision and coordination among teams. Tracking hospital management and staff is responsibility of a leader which helps in effective working of hospital. Maintaining doctors contacts, staff requirements, medical emergency requirements are crucial aspects of hospital management which keeps the hospital on track and provides an accelerated direction.

7. Communication:

A strong communication network in a hospital is major requirement for customer success. On arrival the management should be equipped with all contact which in the time of need can be used to carry out the operational activities.

8. Recognition:

Reward is the optimum account for productivity of staff and management. The working culture of an organisation must support such activities to boost employee morale. In hospital every year best doctor and employee awards are organised in order to activise person morale to continue work at the organisation which directly helps in growth of an organisation.

**b. Briefly explain the Six sigma methodology of quality and discuss how can the same**

**be applied to a Hospital setup.**

**Answer.**

Six sigma is a process of optimizing bottom line processes. It institutionalizes a rigorous, disciplined, fact-based way to deliver more money to the bottom line through process improvement and process design project selected by top management. The projects are delivered through the application of a well-defined set of statistical tools and process improvement. The philosophy of six sigma is to reduce the variation in the quality variable of the output product to the extent that there is probability of getting 3.4 detective products maximum from one million products produced.