

**Department of Electrical Engineering**  
**Engineering Management and Economics**  
**Assignment**  
Spring-2019-20, Dated 13-4-2020

**Instr: Dr. Jehanzeb Khan**  
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**Marks 30**

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Answer to Question No. (1)

(1)

- 1) B    2) C    3) D    4) C    5) A    6) D    7) C  
8) C    9) A    10) B    11) D

Answer to question No. 2(a).

A manager should have these 4 skills:-

1. Conceptual skill.
2. Human skill.
3. Technical skill.
4. Diagnostic skill.

① **Conceptual skill:** It is the ability to see the organization as a whole and the relationship among its parts. Conceptual skills involves the manager's thinking, information-processing and planning abilities.

Knowing where one's department fits into the total organization and how the organization fits into the industry, the community, and the broader business and social environment.

The ability to think strategically (broad long-term view) Conceptual skill is very important for managers at the top, e.g., Microsoft, reflects the conceptual skill of its chairman, Bill Gates. General business goals are clearly stated and communicated through out the company, contributing to Microsoft's leadership reputation and billion-dollar revenues. Gates spread his concept for Microsoft by delegating to a cadre of strong managers. Scott Oki, senior vice-president for sales and marketing, pointed out "Each part of the company has a life of its own now, but Bill is the glue that holds it together."

Many of the responsibilities of top managers - such as decision making, resource allocation and innovation - require a broad view.

- ② Human skill: - It is the ability to work with and through other and to work effectively as a group member.
- The ability to motivate, coordinate, lead, communicate, and resolve conflicts.
  - Allow subordinates to express themselves without fear of ridicule and encourages participation.
  - Relies on the quality of its people for its success.
  - Likes other people and is liked by others.
  - Have good judgement for decisions such as hiring and setting company policy.
  - He makes employees feel valued and inspired and promote close working relationships that are fun.
  - Effective managers are cheer leaders, facilitators, coaches and nurturers.
  - Excellent managers don't take people for granted.
  - Measures employees' satisfaction using formal questionnaire.
  - Tries to increase the frequency, quality and degree of informativeness (newsletter etc.)
- "Getting things done through people."

- ③ Technical skill: - Is the understanding of and proficiency (skill, ability, talent) in the performance of specific tasks.
- Includes mastery of methods, techniques and equipment involved in specific functions such as engineering, manufacturing, finance forecasting and marketing skills.
  - Specialized knowledge, analytical ability, competent use of tools and techniques to solve problems in specific discipline.

- ④ Diagnostic skill: - Managers ability to visualize the most appropriate response.
- Diagnose and analyze a problem and then developing a solution.
- For example high turnover - possible reason - dissatisfaction with pay or not favorable environment or poor interpersonal skills --- find solution by interviewing of employees.

For example, in favorable situation - sales increases at higher rate than anticipated causes, low price or greater demand than predicted or high price by a competitor -- diagnostic skill.

Answer to question 2 (b) :-

- Characteristics of authority :-
- Authority is vested in organizational position not people. Because of the position that manager holds.
  - Authority is accepted by employees. Authority flows top down through the organization's hierarchy, employees comply because they believe that managers have legitimate right to issue orders.
  - Authority flows down the vertical hierarchy: Positions at the top of the hierarchy are vested with more formal authority than are positions at the bottom.
  - Responsibility: Is the flip side of authority coin. It is duty to perform the task or activity an employee has been assigned. When managers have responsibility for task outcome but little authority, the job is possible but difficult. But when managers have authority exceeding responsibility, they may become tyrants.
  - Accountability: Is the mechanism through which authority and responsibility are brought into alignment. It means that people with authority and responsibility are subject to reporting and justifying task outcomes to those above them in the chain of command. Employees must be aware that they are accountable for a task and accept the responsibility and authority for performing it.
  - Delegation of authority: Is a process by which a manager assigns a portion of his total work load to others. Subordinate help ease the manager's burden. In some instances, a subordinate may have more expertise than a manager. It also helps develop subordinate. Delegation of authority involves three steps, assigning responsibility, giving the authority to do the job and establishing subordinate's accountability. Problems with delegation are that subordinate will do too well and pose threat to manager's advancement, no reward for accepting additional responsibility, other view is that subordinate's satisfactory performance is not a threat but an accomplishment by both (subordinate, did the job, manager trained him).

(4)  
- Decentralization:- The process of systematically delegating of power and authority throughout the organization to middle and lower level managers. Decision making power and authority are delegated as far down the chain of command as possible. The greater the complexity and uncertainty of the environment, the greater is the tendency to decentralize. Successful organizations are usually decentralized.

- Centralization:- The process of systematically retaining power and authority in the hands of higher-level managers. Decision making power and authority are with top managers. In times of crises or risk of organization failure, authority may be centralized at the top.

Answer to question 3(a):-

A project is emerged by an idea:-

- Driven by a need.
- A desire for innovation and creativity.
- An addition to a school of thought or a body of knowledge.

All projects have characteristics in common that set them apart from other operations.....

Characteristics of a project:-

- ① A project must have a defined start and stop.
- ② A well defined time frame for completion.
  - A point where it starts..... a 'time zero'
  - A point where it finishes..... 'delivery'.
  - The implication is a time scale.

③ Uniqueness:-

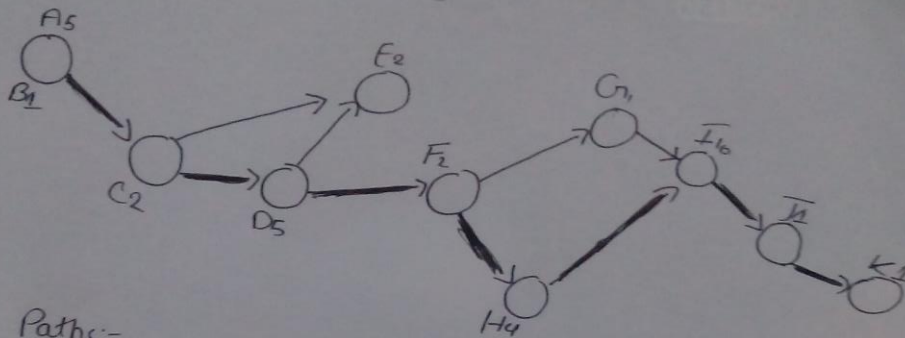
- A unique need distinguished from day to day operations.
- BUT potential repetition not barred subject to consideration of special circumstances.
- Can include contingency planning where start date is unknown.

- ④ Involvement of several people:-
- The project teams
  - Those affected by the project (e.g. new plant operators)
  - Provision of specific skills and approaches.

- ⑤ Limited resources:-
- People, materials, money and time all considered.
  - Potential trade-off between these possible
  - Potential of technology almost limitless.

- ⑥ Sequencing of activities:-
- Interdependence of some activities
  - Step by step progress
  - Opportunity for overlapping.
  - Need for careful planning of ~~the~~ step order.

Answer to question 3(b):



Paths:-

①  $B \rightarrow C \rightarrow D \rightarrow F \rightarrow G \rightarrow I \rightarrow J \rightarrow K$   
 $1 + 2 + 5 + 2 + 1 + 10 + 1 + 1 = 23$

②  $B \rightarrow C \rightarrow D \rightarrow F \rightarrow H \rightarrow I \rightarrow J \rightarrow K$   
 $1 + 2 + 5 + 2 + 4 + 10 + 1 + 1 = 26$

Hence critical path is

$B \rightarrow C \rightarrow D \rightarrow F \rightarrow H \rightarrow I \rightarrow J \rightarrow K$