

Department of Electrical Engineering**Engineering Management and Economics
Assignment**

Spring-2019-20, Dated 13-4-2020

M.Farhan Ali
13032**Instr: Dr. Jehanzeb Khan****Time= 5 Days****Marks 30**

Q.1: 10

1. Engineering Management is:

- A. An art
- B. Both science and art
- C. A science
- D. Neither art nor science

2. Engineers can become good managers only through _____.

- A. Experience
- B. Taking master degree in management
- C. Effective career planning
- D. Trainings

3. When engineer enters management, what is the most likely problem he finds difficult to acquire?

- A. Learning to trust others
- B. Learning how to work through others
- C. Learning how to take satisfaction in the work of others
- D. All of the above

4. Strategic planning is undertaken in which management level?

- A. Lower management level
- B. Middle management level

C. Top management level

D. Lowest management level

5. What management functions refers to the process of anticipating problems, analyzing them, estimating their likely impact and determining actions that will lead to the desired outcomes and goals?

A. Planning

B. Leading

C. Controlling

D. Organizing

6. What refers to the establishing interrelationships between people and things in such a way that human and materials resources are effectively focused toward achieving the goal of the company?

A. Planning

B. Leading

C. Controlling

D. Organizing

7. Actual performance normally is the same as the original plan and therefore it is necessary to check for deviation and to take corrective action. This action refers to what management function?

A. Organizing

B. Planning

C. Controlling

D. Staffing

8. Strategic planning is undertaken in which management level?

A. Lower management level

B. Middle management level

C. Top management level

D. Lowest management level

9. For a project manager to achieve his given set of goals through other people, he must have a good _____.

- A. Interpersonal skills
- B. Communication skills
- C. Leadership
- D. Decision- making skills

10. An engineer is required to finish a certain engineering job in specific time. He is said to be _____ if he finished the job within the required specific time.

- A. Efficient
- B. Effective
- C. Reliable
- D. Qualified

11. If an engineer provides less input (labor and materials) to his project and still come out with the same output, he is said to be more _____.

- A. Managerial skill
- B. Economical
- C. Effective
- D. Efficient

Q.2 a) A Manager's job is complex and multidimensional and requires a range of skills. What are those skills, discuss in detail.

5 Marks

b) Briefly explain characteristics of authority.

5 Marks

Q.3: a) How does a project emerge? Describe its characteristics.

5 Marks

b) An international Conference is planned in Iqra national University. The activities listed down with their predecessors and time taken. Prepare a network diagram and determine the critical path.

5 Marks

Activity	Precedence	Time
A Date, topics & Speaker	-	5 days
B Prepare logo & brochures	-	1 day
C Send letters to speakers	B	2 days
D Get confirmation from Speakers	C	5 days
E Send letters to participants	C,D	2 days
F Obtain travel plan from speakers	D	2 days
G Arrange Accommodation	F	1 day
H Get handouts from speakers	F	4 days
I Finalize Registration	G,H	10 days
J Setting of Hall	I	1 day
K Conduct of Program	J	1 day

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Q1: ⇒ Objectives :-

1. B = Both Science & Art
2. C = Effective Career planning.
3. D = All of the above.
4. C = Top Management Level.
5. A = Planning
6. D = organizing
7. C = Controlling
8. C = Top Management Level
9. A = Interpersonal Skills
10. B = Effective
11. D = More Efficient

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Question # 02
(Part A)

Answer e- The skills that are required for a manager's job are as following:

- ① Conceptual Skill
- ② Human Skill
- ③ Technical Skill
- ④ Diagnostic Skill

1. Conceptual Skills:-

Conceptual Skill is the ability to see the organization as a whole & the relationship among its parts. Conceptual skills involve the manager's thinking information-processing & planning abilities, knowing where one's department fits into the industry, the community, & the broader business & social environment.

The ability to think strategically
(broad long term view)

② Human Skills

Human skill is the ability to work with & through other people & to work effectively as a group member. It is the ability to motivate, coordinate, lead, communicate, & resolve conflicts. Human skill allows subordinates to express themselves without fear of ridicule & encourages participation. It relies on the quality of its people for its success. Human skill can make you like other people & is liked by others.

- ⇒ Have good judgement for decisions such as hiring & setting company policy
- ⇒ He makes employees feel valued & inspired & promote close working relationship that are fun
- ⇒ Excellent managers don't take people for granted.
- ⇒ Effective managers measure employee's satisfaction using formal questionnaire.
- ⇒ Getting things done through other people

③ Technical Skill :-

is the understanding of and proficiency (skill ability talent) in the performance of specific tasks. It includes mastery of methods, techniques & equipment involved in specific functions such as engineering manufacturing finance forecasting & marketing skills.

⇒ Specialized knowledge, analytical ability
competent use of tools & techniques to solve problems in specific discipline.

④ Diagnostic Skills :- manager's ability to visualize most appropriate response.

⇒ Diagnose & analyze a problem & then developing a solution.

⇒ For example high turnover - possible reason dissatisfaction with pay or not favorable environment or poor interpersonal skill find solution by interviewing of employees.

(Part b)

⇒ Characteristics of Authority:-

⇒ Authority is vested in organizational position not people. because of the position that manager holds.

① Basis of getting things done:-

Authority provides the basis of things done in the organization. It refers to the right to affect the behaviour of others in the organization with a view of performing certain activities to accomplish the defined objectives.

② Authority is accepted by Employees:-

Authority flows top down ~~to~~ through the organization's hierarchy; employees comply because they believe that managers have legitimate right to issue orders.

③ Authority flows down to the vertical hierarchy:-

Positions at the top of the hierarchy are vested with more formal authority than are positions at the bottom.

④ Responsibility :-

is the flip side of authority coin. It is the duty to perform the task or activity an employee has been assigned.

⑤ Accountability :-

is the mechanism through which authority & responsibility are brought into alignment. It means that people with authority & responsibility are subject to reporting & justifying task outcomes to those above them in the chain of command.

⑥ Delegation of Authority :-

is the process by which a manager assigns a portion of his total work load to others. Subordinates help ease the manager's burden. In some instances, a subordinate may have more expertise than a manager. It also helps develop subordinates.

⑦ Decentralization :-

the process of systematically delegating of power & authority throughout the organization to middle & lower level managers. Decision making power & authority are delegated as far down the chain of command as possible.

⑧ Centralizations-

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The process of systematically retaining power & authority in the hands of higher level managers. Decision making power & authority are with top managers.

In times of crises or risk of organization failure, authority may be centralized at the top.

⑨ Coordinating Activities-

It is the process of linking the activities of the various departments of the organization. The reason for the coordination is that departments & work groups are independent. System must be put into place to keep the activities of each department focus on the attainment of organizational goals.

End of Question # 02
(Part b)

Question # 03
(Part A)

⇒ Project definitions:-

⇒ A project is a temporary endeavor undertaken to create a unique product, service or a result.

OR

⇒ A project can be defined as an activity that achieves a clear objective against a time scale.

* Temporary *

means that every project has a definite beginning & a definite end. The terms are temporary as well. It ends when objectives are achieved or they are no more achievable.

⇒ Temporary does not apply to the outcome, that why they have social, economic & Environmental impacts...
unique product, services or results

A product that is quantifiable
 A capability to perform a service
 A result like outcomes

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For example

For example

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* Uniqueness :-

is an important characteristic of a project's deliverables.

For example:

The presence of repetitive elements does not change the fundamental uniqueness of the project's work.

Organizations achieve their objectives either through projects or operations.

They share the following

- performed by people
- constrained by limited resources
- planned, executed not controlled

The primary difference is that operations (ongoing & repetitive) they are there to sustain the business once the objectives are met, they adopt a new set of objectives & the work continues where projects (temporary & unique)

⇒ Project characteristics e-

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

① Defined start & finish.

② 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 e-

A unique need distinguish from day-to-day operations but potential repetition not barred subject to consideration of special circumstances. It can include contingency planning where start date is unknown.

④ Involvement of several people e-

→ Involves the project team.

→ Those affected by project (e.g. New plant operators)

→ Provision of specific skills & Approaches.

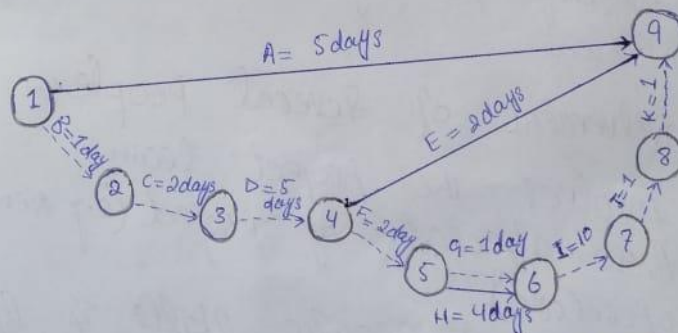
⑤ Limited Resources :-

- people, Materials, Money & Time all constrained.
- Potential trade off between these possible
- Potential of technology almost limitless

⑥ Sequencing of Activities :-

- Independence of some Activities.
- Step by step progress.
- opportunity for overlapping
- Need for careful planning of step order.

Question # 03
(Part b)



Critical path = BCDFHIJK = 26 days