

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

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

**Instr: Dr. Jehanzeb Khan****Time= 5 Days****Marks 30**

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Q.1:

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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

<b>Activity</b>	<b>Precedence</b>	<b>Time</b>
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

① Engineering management is  
Ans (B) Both science and art

② Engineers can become good managers only  
 through.  
Ans ~~(A) Experience~~ Effective career planning

③ When engineer enters management, what is the most likely problem he finds difficult to acquire.  
Ans (D) All of the above.

④ Strategic planning is undertaken in which management level?  
Ans (C) Top management level

⑤ What management function refers to the process of anticipating problems analyzing them, estimating their likely impact & determining action that will lead to the desired outcomes & goals.  
Ans (A) Planning

⑥ What refers to the establishing interrelationship b/w people & things in such way that human & material resources are effectively focused toward achieving the goal of the company?  
Ans ~~(B) organizing~~

Ans = (D) organizing

②

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

Ans

(C) Controlling

⑧ Strategic planning is undertaken in which management level?

Ans

(C) TOP management.

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

Ans

~~(C) Leadership~~ A interpersonal skills 'A'

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.

Ans

(B) Effective

⑪ An engineer provides less input (to his project) & still come out with the same output, he is said to be more.

Ans

(D) Efficient

(Q.2) as A manager job is complex & multidimensional & requires a range of skills. what are those skills discuss in detail?

Ans The skills are following.

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

① Conceptual skill:

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

The ~~social~~ ability to think strategically (board long term view).

Conceptual skill is very important for manager at the top. For example Microsoft reflects the conceptual skill of its chairman.

② Human skill:

Human skill is the ability to work with & through others & to work effectively as a group member.

The ability to motivate, coordinate, lead, communicate & resolve conflicts, allow subordinate to express themselves without fear of & encourage participation. Depends on the quality of its people. For its success like other people & is liked by

(1) others have good judgment for decisions such as hiring & setting company policy etc. make employees feel & inspired & promote class working relationship that are fun effective managers are cheer - that are fun.

### (3) Technically Skill :-

Technically skill is the understanding of & proficiency skill, ability, in the performance of specific tasks.

Includes mastery of a methods, technique & equipment involved in specific function.

Such as engineering involved in specific function such as engineering, manufacturing, finance, forecasting & marketing skills specialized knowledge analytical ability, competent are of tools & techniques to solve problems in specific discipline.

### (4) Diagnostic skills

Manager ability to visualize the most appropriate response diagnose & analyze a problem & then developing a solution for example high morale - possible reason, dissatisfaction with pay or not favorable environment or poor interpersonal skill find solution by interviewing of employees.

Q3 (b) # Briefly explain characteristic of authority?  
Ans: Characteristic of authority are following.

(1) Authority is vested in organizational position not people because of the position that people hold.



- ⑤
- ② Authority flows down the vertical hierarchy. Position at the top of the hierarchy are vested with more formal authority than are position at the bottom.
  - ③ Authority is accepted by employees. Authority flows top down through the organized hierarchy because they believe that managers have legitimate right to issue orders.
  - ④ Responsibility is the flip side of the authority coin. It is the duty to perform the task of activity an employee has been assigned when managers have responsibility for these outcomes.
  - ⑤ Differentiating between positions. The last building block of organization structure is differentiating line & staff position. Line managers work directly toward organizational goals.
  - ⑥ Centralization: The process of systematically retaining power & authority in the words of higher-level managers. Decision making power & authority are with top managers in times of crisis or risk of organization failure. Authority may be centralized at the top.
  - 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.

⑥

Q3a) How does project emerge? describe its characteristics?

Project emerge by driven by a need.  
A desire for innovation & creativity an addition to a school of thought or a body of knowledge.

Characteristics of Project:

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

- 1. Defined start & finish
- ② Time frame for completion.
  - A point where it starts..... a 'time zero'
  - A ~~time~~ 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 based subject to consideration of special circumstance.
- Can include contingency planning where start date is unknown.

④ Involvement of several people :-

- The project team.
- Those affected by the project (eg. new plot).
- Provision for specific skills & approaches

⑤ Limited resources :-

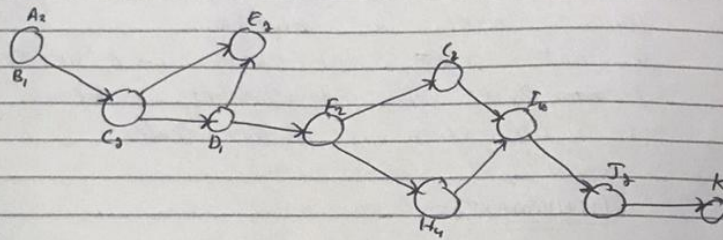
- People, material, money and time all contained
- ~~people~~ Potential trade off between these possible.
- Potential of technology almost limitless.

⑦

⑥ Sequencing of activities:

- Interdependence of some activities.
- Step by step progress.
- Opportunity for overlapping.
- Need for careful planning of step order.

Q3 (b)

Path

$$\textcircled{1} B \rightarrow C \rightarrow D \rightarrow F \rightarrow G \rightarrow I \rightarrow J \rightarrow K$$

$$1 + 2 + 5 + 2 + 1 + 10 + 1 + 1 = 23$$

$$\textcircled{2} B \rightarrow C \rightarrow D \rightarrow F \rightarrow H \rightarrow I \rightarrow J \rightarrow K$$

$$1 + 2 + 5 + 2 + 4 + 10 + 1 + 1 = 26$$

Hence critical path is

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