

Engineering management and economics.

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Q1)

1) Engineering Management is :

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

2) Engineers can become good managers only through:

- A) Experience ✓
- B) Taking master degree in management.
- C) Effective career planning.

3) When engineers enter 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.

(2)

- c) Top management level ✓
- d) Lowest management level.

5) What management functions refers to the process of anticipating problems analyze 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 inter-relationship b/w people and things is 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?

(3)

- 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

(4)

D) Qualified.

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

- A) Managerial skills.
- B) Economical
- C) Effective
- D) Efficient ✓

Q2) a) A manager's job is complex and multidimensional and requires a range of skills. What are those skills, discuss in detail.

Ans) A manager's job is complex and multi-dimensional and requires a range of skills.

- 1) Conceptual skill
- 2) Human skill
- 3) Technical skill
- 4) Diagnostic skill

1) Conceptual skill :

Is the ability to see the organization as a whole and the relationship among its parts.

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- ↳ Conceptual skill 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 social environment.
- ↳ The ability to think strategically (broad long term view)

2) Human skill :

Is the ability to work with and through others and to work effectively as a group member.

↳ The ability to motivate, coordinate, lead, communicate and resolve conflicts.

↳ Allows subordinates to express themselves without fear of ridicule and encourages participation.

↳ Relies on the quality of its people for its success.

↳ Have good judgment for decisions such as hiring and setting company policy.

↳ Likes other people and is liked by others.

↳ He makes employees feel valued and inspired and promote close working relationship that are fun.

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- ↳ Effective managers are cheer leaders, facilitators, coaches.
- ↳ Excellent managers don't take people for granted.
- ↳ Tries to increase the frequency, quality and degree of informativeness (news letters, etc)

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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:

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High turn-over possible season-dissatisfaction with pay or not favorable environment or poor interpersonal skill, find solution by interviewing of employees.

For example:

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

b) Briefly explain characteristics of authority?

Ans) Authority :

The formal and legitimate right of a manager to make decisions issue orders and allocate resources.

Characteristics of authority

1) Authority is vested in organizational position not people :

Because of the position that managers hold.

2) Authority is accepted by employees :

Authority flows top down through the organization's hierarchy, employee comply because they believe that managers have legitimate

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right to issue orders.

3) Authority flow down 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. When managers have responsibility for task outcomes but little authority, the job is possible but difficult. But when managers have authority exceeding responsibility, they may become tyrants.

5) Accountability: Is the mechanism through which authority and responsibility are brought into alignment. It means that people with authority and responsibility are subjects 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.

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6) 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.

(Q3)

(a) How does a project emerge? Describe its characteristics.

Ans)

EMERGENCE:

Any project is an idea.

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

Characteristics of a project:

↳ Project's Defined as:

A project is a temporary endeavor undertaken to

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create a unique product, service, or a result.

↳ A group of activities that have to be performed in a logical sequence to meet pre-set objectives outlined by a 'client'.

↳ A project can be defined as an activity with a specific goal occupying a specific period of time.

↳ A project is a human activity that achieves a clear objective against a time scale.

↳ Temporary:

↳ That every project has a definite beginning and a definite end.

↳ The teams use temporary as well.

↳ It ends when objectives achieved / they are no more achievable / valid.

↳ Unique product, services or results:

↳ A product that is quantifiable.

↳ A capability to perform a service.

↳ A result like outcomes or documents.

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↳ Uniqueness : An important characteristics of project deliverables.
For example:

↳ The presence of repetitive element does not change the fundamental uniqueness of the project work.

↳ organization achieve their objectives either through projects or operations.
They share the following:

↳ Performed by people.

↳ constrained by limited resources.

↳ Planned, executed and controlled

The primary difference is that, operations (on going and repetitive) they use these to sustain the business and once the objectives are met, they adopt a new set of objectives and the work continues whereas, Projects (temporary and unique) they are concluded once the objectives are achieved.

b) An international conference is planned in IGRA national university.

The activities listed down with their predecessors and time taken.

Prepare a network diagram and

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determine the critical path.

Solution:

Activity	Precedence	Time.
A Date, topics & speakers	-	5 days
B Prepare logo and brochures.	-	1 day
C Send letters to speakers.	B	2 days
D Get confirmation from speakers	C	5 days
E send letters to participants.	CD	2 days
F Obtain travel plan from speakers	D	2 days
G Arrange Accomodation	F	4 days
H Get handouts from speakers	F	4 days
I Finalize Registration	G+H	10 days
J setting of Hall	I	1 day

