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Subject :- Engineering management  
and Economics

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Assignment of :- Engineering  
management and  
Economics.

Q 1 :-

- 1) Engineering management is both Science and Art.
- 2) Engineer can become good managers through Effective career Planning.
- 3) When Engineers enters management, what is the most likely problem he finds difficult to acquire ~~At~~ All of the above
- 4) Strategic planning is undertaken in which management level
- 5) what management function refers to the process of anticipating problems, analyzing them, estimating likely their impact and determining action that will lead to the desired outcomes and goals? (Planning)
- 6) what refers to the establishing interrelationship b/w people and things in such a way that human and material resources are effectively focused towards achieving the goals of the company? (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. the action refers to what management function, controlling
- 8) Strategic planning is undertaken in which management level?  
TOP management level
- 9) for a project manager to achieve his given set of goals through other people, he must have a good interpersonal skills.
- 10) An Engineer is required to finish a certain engineering job in specific time. He said to be effective if he finished the job within the required specific time.
- 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 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.

Ans:- The necessary skills for managing an organization can be summarized in three categories

- (1) Conceptual Skill
- (2) Human Skill
- (3) Technical Skill

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

(2) Human Skill:- Human skill is the ability to work effectively as a group member with and through other people and to work effectively



as a group member. This skill is demonstrated in the way a manager relates to other people, including the ability to motivate, facilitate, coordinate, lead, communicate and resolve conflicts. A manager with human skills allows subordinates to express themselves without fear of ridicule and encourages participation.

(3) Technical Skills - Technical skill is the understanding of and proficiency in the performance of specific tasks. Technical skill includes mastery of the methods, techniques and equipment involved in specific function. Technical skill also include specialized knowledge, analytical ability and the competent use of tools and techniques to problems in that specific discipline.

Q2: (b) Briefly explain characteristics of authority.

Ans: Five (5) most important characteristics of Authority.

(1) Legitimacy

(2) dominance

(3) an informal power

(4) rationality

(5) accountability.

(1) Legitimacy :- it determine the effectiveness of authority. hence it is the hall mark of the concept of authority. according to Robert Dahl "A command B and B feels A has perfect right to do so and to which he has complete obligation to obey. Power of this kind is often said to be legitimate. and legitimate power is often called authority.



(2) Dominance :- Authority is capacity of individual to command others. An individual or a group which possesses authority exercises dominance over other individuals. Authority is a command of superior to an inferior.

(3) An informal Power :- it is not a formal power as it lacks characteristics which are the main features of formal power. according to Fredrick "Authority is not a power but something that accompanies power". it is the quality in men and things which adds to their power. something which creates power but it is not itself power.

(4) Rationality :- this is the main characteristics of authority. in the word of Fredrick, "the man who has authority possesses something that I would describe as the capacity for reasoned elaboration for giving convincing reasons for what he does or proposes to have others to do." Evidently the basis of authority is logic or reason.

(5) Accountability :- the individual or group of individual who possess authority are responsible to some higher authority. in a democratic system accountability is the most significant characteristic of authority.

Q3: a) How does a project emerge? Describe its characteristics.

Ans:-

The project management life cycle is usually broken down into four phases: initiation, planning, execution and closure. these phases make up the path that takes your project from the beginning to the end.

\* project monitoring.

→ Characteristics :-

- \* Scope :- defines what will be covered in a project.
- \* Resources :- what can be used to meet the scope.
- \* Time :- what tasks to be undertaken and when.
- \* Quality :- the spread or deviation is allowed from a desired standard.



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- \*) A Strong team
- \*) clear communication
- \*) Good Change control
- \*) A clear vision
- \*) RISK control.

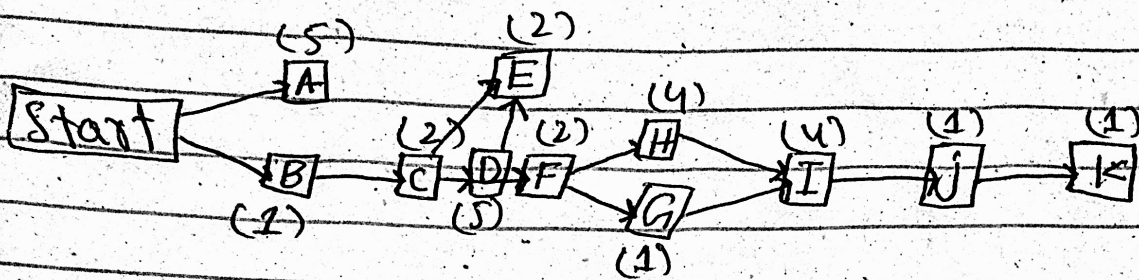
Q 30- (b)

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Activity	Precedence	Time
A	-	5
B	-	1
C	B	2
D	C	5
E	C, D	2
F	D	2
G	F	1
H	F	4
I	G, H	10
J	I	1
K	J	1

network diagram is below given

## Network Diagram :-



critical path :-

$$\text{Path(1)} = B + C + D + F + H + I + J + K$$

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

$$\boxed{\text{Path(1)} = 26 \text{ days}}$$

$$\text{Path(2)} = B + C + D + F + G + I + J + K$$

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

$$\boxed{\text{Path(2)} = 23 \text{ days}}$$

So the critical path is path(1) because its duration is longer (26 days) than path(2) (23 days)