ENTREPRENEURSHIP & PROJECT MANAGEMENT

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NOTE:

MAKAUT course structure and syllabus of 3rd semester has been changed from 2019. **Entrepreneurship & Project Management** has been introduced as a new subject in present curriculum. Taking special care of this matter we are providing chapterwise model questions and answers, so that students can get an idea about university questions patterns.

INTRODUCTION ON ENTREPRENEURSHIP

Multiple Choice Type Questions

1. Which of the following statements is correct? [MODEL QUESTION]
   a) Self – employment and entrepreneurship is one and the same thing
   b) Entrepreneurship is considered to be the best form of employment
   c) An entrepreneur possesses employment generation capacity
   d) An entrepreneur enjoys a guaranteed income.

Answer: (c)

2. Entrepreneurship training is imparted in [MODEL QUESTION]
   a) Banks
   b) Financial institutions
   c) national small industries corporation
   d) MSME-DI

Answer: (d)

3. The term 'Entrepreneurship' stands for [MODEL QUESTION]
   a) synonym of entrepreneurship
   b) A manager who leaves the company to start his venture
   c) Entrepreneurs within a corporate
   d) an entrepreneur who fails in his venture

Answer: (b)

4. Entrepreneurs who take business as an integral part of their life is called [MODEL QUESTION]
   a) Challengers
   b) Solo operators
   c) Lifetimes
   d) Drone entrepreneur

Answer: (c)

5. Short-term loan by an entrepreneur is taken for [MODEL QUESTION]
   a) Land& building
   b) Plant and machinery
   c) Computer& equipment
   d) Working capital

Answer: (d)

6. The odd trait which does not describe an entrepreneur is [MODEL QUESTION]
   a) high levels of initiative
   b) autonomy
   c) opportunity seeker
   d) trend follower

Answer: (d)

7. Intrapreneurs are [MODEL QUESTION]
   a) small businessman
   b) corporate executives
   c) corporate executives turned businessman

d) Unsuccessful entrepreneurs

Answer: (c)

8. The most important trait of an Entrepreneur is [MODEL QUESTION]

a) innovation b) money c) labour d) none of these

Answer: (a)

9. Which words fit the definition of intrepreneur? [MODEL QUESTION]

a) Someone working within an existing business to introduce innovation and change

b) Taking risks for business gains

c) Someone generally stick to the processes already in use

d) None of the above

Answer: (a)

10. Which of the following is a common entrepreneurial trait? [MODEL QUESTION]

a) A high need for achievement

b) Viewing changes as threatening

c) A need for structured environments

d) All of the above

Answer: (a)

11. According to Schumpeter, an Entrepreneur is [MODEL QUESTION]

a) Missionary b) Visionary c) Innovator d) Initiator

Answer: (c)

12. What is the process by which individuals pursue opportunities without regard to resources they currently control? [MODEL QUESTION]

a) Startup management b) Entrepreneurship

c) Financial analysis d) Feasibility planning

Answer: (b)

13. Which of the following is not one of the environmental factors that may influence the potential of a small business? [MODEL QUESTION]

a) Banks recognizing the needs of small firm

b) An industry with economies of scale

c) Close contacts with customers related to problem solving activities

d) Industrial structure favours small independent units

Answer: (a)

14. The twin characteristics of entrepreneurship as identified by McClelland are [MODEL QUESTION]

a) innovativeness and decision making under uncertainly

b) perception of opportunity and far-sightedness

c) risk bearing and decision making
d) None of these

Answer: (a)

15. An entrepreneur was described "as a person who innovates and introduces something new in the economy" by [MODEL QUESTION]
a) Francis Walker
b) Joseph Schumpeter
c) J. B. Say
d) Peter Drucker

Answer: (b)

16. Role of an entrepreneur is [MODEL QUESTION]
a) Generation of employment
b) Complementing economic growth
c) Introduction of new products to market
d) All of these

Answer: (d)

17. The word 'entrepreneur' is derived from the French root which means [MODEL QUESTION]
a) adventurism
b) thrill seeking
c) managing
d) to undertake

Answer: (d)

18. A drone entrepreneur is one who [MODEL QUESTION]
a) is very cautious in adopting change
b) refuses to use opportunities
c) adopts change easily
d) is highly innovative

Answer: (b)

19. Favourable religious belief behind the rise of entrepreneurs was noted by [MODEL QUESTION]
a) Schumpeter
b) Max Weber
c) Diamond
d) Higgins

Answer: (b)

20. Gap filling was considered as one of the functions of entrepreneur by [MODEL QUESTION]
a) McClelland
b) A.H. Cole
c) Libenstein
d) Adam Smith

Answer: (c)

21. Who gave emphasis on innovative idea of entrepreneurs? [MODEL QUESTION]
a) Cartilton
b) Cochran
c) Max Webber
d) P. F. Drucker

Answer: (d)

22. The resistance of employees in an organization against flexibility, growth, and diversification can be overcome by developing [MODEL QUESTION]

a) entrepreneurship
b) intrapreneurship
c) managerial domain
d) administrative domain

Answer: (b)

23. Which of the following is alternatively called corporate venturing? [MODEL QUESTION]

a) Risk
b) Intrapreneurship
c) Act of stating a new venture
d) Offering new products by an existing company

Answer: (b)

24. An entrepreneur doing business within the national border is called [MODEL QUESTION]

a) international entrepreneurship
b) intrapreneurship
c) domestic entrepreneurship
d) imports

Answer: (c)

25. Entrepreneurs emerging from within the organization are termed as [MODEL QUESTION]

a) Organizers
b) Managers
c) Intrapreneurs
d) Leaders

Answer: (c)

26. Responsive societies will [MODEL QUESTION]

a) Adapt to changes
b) Encourage collaboration
c) Empower innovators
d) All of these

Answer: (d)

27. An intrapreneur [MODEL QUESTION]

a) is semi-independent
b) is real owner of the business
c) bears full risk of the business
d) takes profits of the business

Answer: (a)

28. An entrepreneur was described "as a person who prays a certain price for a product to result it at an uncertain price" by [MODEL QUESTION]

a) Richard Cantillion
b) Joseph Schumpeter
c) J.B. Say
d) Carl Menger

Answer: (a)

Short Answer Type Questions

1. Define the term 'Entrepreneurship. **[MODEL QUESTION]**

Answer:

Concept

- The term '**Entrepreneurship**' has been derived from the **French** word **entreprendre**.
- Entrepreneurship is the process of development of individual talents to provide supply of entrepreneurial services. It is the combination of the individual, the environment, socio-cultural factors and the support systems.

Definition of Entrepreneurship

- Various thinkers have defined entrepreneurship in different ways. Some of the definitions are stated as under:
- According to **Robert C. Ronstadt**, "entrepreneurship is the dynamic process of creating incremental wealth. This wealth is created by individuals who assume the major risks in terms of equity, time and/or career commitment of providing value for some product or service. The product or service itself may or may not be new or unique but value must somehow be infused by the entrepreneur by securing and allocating the necessary skills and resources".
- **Berna** defines, entrepreneurship is basically a type of human skill or more accurately, a combination of skills and abilities.
- **Bowen and Hisrich** state that entrepreneurship is the process of creating something different with value by devoting the necessary time and effort, assuming and accompanying financial, psychic and social risk receiving the resulting rewards of monetary and personal satisfaction.
- According to **Joseph A. Schumpeter**, a great **Harvard economist**, the task of entrepreneurship "is to reform or revolutionize an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products. Entrepreneurship as defined, essentially consists in doing things that are not generally done in the ordinary course of business routine."

2. Define the term Entrepreneur. **[MODEL QUESTION]**

Answer:

- In simple sense, an **entrepreneur** is someone who identifies an opportunity, collects the money and other resources needed to exploit that opportunity and takes some or all of the risks associated with executing industrial or business ventures.
- **Berna** defines entrepreneur as one who brings into existence a new industrial enterprise either alone or in collaboration with others.

- **Joseph A. schumpter** defines entrepreneur as an innovator who is characterized by potentialities of doing new things or doing things in a newer way. He is an economic leader with atavistic will power and sets a creative response to situation and acts as a chief conducive factor in the process of economic development.
- **To conclude**, an entrepreneur is one who, as a key-planner, sole risk-taker and decision maker, brings into existence a new enterprise/venture either alone or in collaboration with others.

3. Distinguish between an entrepreneur and a manager. **[MODEL QUESTION]**

Answer:

Manager	Entrepreneur
1. A manager is normally and academically qualified person having a degree in Arts/Science/Commerce or Engineering and Technology along with an MBA	1. An entrepreneur may or may not be qualified and the academic qualifications may not be of much extra value in developing business
2. A manager is satisfied with his day-to-day management work of an existing running business owned by an individual group or a professional company belonging to share holders	2. An entrepreneur has to be mentally and physically busy all the time developing his own business, delving into the nitty-gritty of business problems and bearing the stress and strain.
3. A manager will normally get a fixed salary at the end of the month, and sometime may get a commission on production or marketing	3. An entrepreneur normally draws a monthly salary/alliance/lump sum from his business accounts which may be flexible depending on the business position. He may however siphon off some money from the business and either buy some shares/car or land/remove some money in separate account. This may be an honest effort or a business tactics depending on the particular entrepreneur.
4. A manager normally gets the backing and support of the senior managers and top people of the company and is normally a happy person with a regular stereo typed life style, going to office at 10.00 A.M and leaving at 5.00 P.M unless he is in a department where his presence is required at odd hours.	4. An entrepreneur on the other hand has a very irregular life, working hard throughout the day visiting Govt. offices, banks, customers etc. and coming back home very late at night. His earning per month is normally about four times of his contemporary manager if he is an successful entrepreneur.

4. What are the risks faced by an entrepreneur? **[MODEL QUESTION]**

Answer:

- An entrepreneur has to face different types of risks.
- Firstly, an entrepreneur has to face, in lunching a small business, a substantial business risk in the sense that the failure rate of big enterprise is quite high.

- Secondly, an entrepreneur has to face a high degree of financial risk simply because he invests most, if not all, of his personal finance in his own business, as he does not get seed (venture) capital normally from the external sources.
- Thirdly, an entrepreneur takes a career risk in the sense that he leaves a secure job for initiating a venture with highly uncertain future.
- Fourthly, an entrepreneur incurs family and social risks – he is left with little time for attention to family and others.
- Lastly, an entrepreneur assumes a psychological risk.

5. 'Entrepreneurship is influenced by Risk Taking Behaviour and Innovation'. Do you agree with this statement? Briefly justify your assertions. [MODEL QUESTION]

Answer:

The two qualities of entrepreneurs namely, Risk taking behavior and innovation definitely influence the quality of entrepreneurs but it is also true that entrepreneurship is influenced and developed by (a) family background (b) idea, Item or service selection (c) capacity to prepare project report (d) capacity of interpersonal relationship (e) idea about marketing and (f) self-confidence.

An entrepreneur is also influenced by the above in different cases.

6. Explain Psychological and Social factors of entrepreneurship.

[MODEL QUESTION]

Answer:

The psychological and social factors of an entrepreneurship have been studied by many authors like McClelland, Hayek, Schumpeter, Schumacher and others who have found out that the psychological factors of entrepreneurship is influenced by the family background of the entrepreneur. If he comes from a business family he is more likely to take up further business activities of his own or jointly with the other members of the family. This happens in Gujarat, Rajasthan, Punjab, Tamilnadu and partly in Karnataka, Maharashtra, Andrapradesh, Chhattisgarh, Jharkhand and Haryana. The psychology of the young generation in state like WB, Bihar, Assam, MP, Kerala etc. is predominately service oriented and not with risk taking orientation. A time has come when this psychological factor should be challenged and changed both for economic development, investment and employment generation.

The social factors also are important because many families looked down upon entrepreneurship and feel the doing business is the job of mediocre and not for the academically brilliant people claimed by some states like WB, Kerala, Delhi, Haryana etc. But a time has come when these social factors also should be seriously challenged and changed to suit the economic development of the country.

7. What is innovation? **[MODEL QUESTION]**

Answer:

- **Innovation** refers to the process of converting a creative into a useful product.
- Innovation may be defined as the successful implementation of creative ideas within an organisation.
- In defining innovation P.F Drucker states that innovation is the means by which new and newer products and technologies are invented.
- To conclude, innovation is the process of doing new things in a newer way with the help of new and newer technology.

8. Distinguish between creativity and innovation. **[MODEL QUESTION]**

Answer:

Creativity	Innovation
1. Creativity implies the ability	1. Innovation implies activity
2. Creativity is the pre-requisite to innovation	2. Innovation is the transformation of creative ideas into useful application
3. Creativity induce invention	3. Innovation induces new and newer products or service, new technologies new markets and new sources of supply with the re-organisation of the existing system. Innovation depends on the creativity which is the ability of a person
4. Creativity may be viewed as new insight which indicates better ways of dealing with reality.	4. Innovation is the radical, discontinuous change and creativity is the ability to devise and implement such changes.
5. Creativity may be treated as the cause.	5. Innovation may be treated as the effect

9. What are the techniques of creativity enhancement? **[MODEL QUESTION]**

Answer:

Techniques of creativity enhancement

The following techniques may enhance creativity.

- **Brainstorming**
  - → **Brainstorming** is an important technique for stimulating imaginative and novel ideas.
  - → This takes place in a class room setting, generating ideas in the form of free association.
  - → This free association with unrestricted thinking helps to generate novel idea and a unique solution could be reached.
- **Synectics**
  - → **Synectics** refer to the generation of new ideas or using old ideas in a new way from unsuspecting angles.
  - → This approach of creativity enhancement assists in generating such ideas.

10. Mention the entrepreneurial qualities and competencies. **[MODEL QUESTION]**

Answer:

Entrepreneurial Qualities and Competencies

The following qualities and competencies are required to be possed by an entrepreneur.

1. **Must have vision:** Vision is a guiding purpose which propels an entrepreneur foreword. Entrepreneurs' vision serves as a bacon and nothing can stand in the way.
2. **Must have creative talent:** An entrepreneur must have creative talent of thinking and intention to create new and newer things into existence.
3. **Must have innovativeness:** An entrepreneur must have the innovative quality of successful implementation of creative ideas.
4. **Must have self-confidence:** Self-confidence closely relates to self-esteem. An entrepreneur who is not self-confident does not feel good about himself would not be able to meet a challenge.
5. **Must have decisiveness:** An entrepreneur must have his intuitive powers and be able to make accurate predictions and take right decisions at right time and right place.
6. **Must have high energy level:** A successful entrepreneur even in very difficult situation can call on their energy for making things happen.
7. **Must have to be a risk-taker:** An entrepreneur must have to assume risk under uncertainty.
8. **Must have strong personality:** An entrepreneur must possess sound personality that characterize and determine his/her unique patterns of adjustment in his/her relationships with others and his/her environment and which make the entrepreneur different from others.
9. **Must have managerial qualities:** An entrepreneur must have some managerial qualities like organizer, director, motivator, controller, decision maker and communicator etc.
10. **Must have high level of motivation:** Motivation is a dynamic force setting an entrepreneur into motion and action.

11. Discuss the role of Government in promoting entrepreneurship. **[MODEL QUESTION]**

Answer:

Government has a big role in developing entrepreneurship in the country as well as every state for various reasons:

a) Govt. can create jobs for a maximum of 2 – 5% of the young people, balance 95 -98 % people depend on themselves either for a professional carrier or for creating self – employment along with job opportunities of hundreds and thousands of people.

b) For this govt. has a big role e.g., offering infrastructure to all prospective entrepreneurs e.g., land, building, water, electricity etc either separately or in the form of "Industrial estates" where all facilities are available at one place.

c) Government must arrange for loan of different amount with different interest rates and various forms of facilities and conditions. Government loans can be given both in

cash, kind, and subsidies, non – refundable and as grant. This should be available on the project or entrepreneurship basis or on interest and hypothecation basis which create problems for entrepreneurs on the beginning.

d) Bank loans also should be facilitated by Government so that govt. at times can be the guarantor for the loan.

e) Technology should be made available by Government either from its own sources e.g., existing Government factories or from universities and consulting firms.

f) Marketing facilities should be created by Government for marketing various products like agricultural, mineral, metallurgical, chemical, glass and ceramic, cotton, textile, electronic computer and various services and financial products.

g) Government should also help the new entrepreneurs to import and export various products to create foreign market as well as improve their other products with foreign components.

h) Government should offer training facilities to prospective entrepreneurs in technology, labour, finance, marketing, computer as well as Business Management.

i) Government should offer subsidy as well as various facilities through SISI, C &SSI, KVIC, SIDBI, WBFC, WEBCON, and WBSIDC.

j) Above all govt. role is to promote, develop and when they approach the Government, they should co-operate in all possible ways.

12. Differentiate between convergent thinking and divergent thinking?

[MODEL QUESTION]

Answer:

Convergent thinking	Divergent thinking
Convergent thinking refers to the process of figuring out a concrete solution to any problem.	Divergent thinking refers to the process of thinking to which explores multiple possible solutions in order to generate creative ideas.
It is a straight forward process that focuses on figuring out the most effective answer to a problem.	This process refers to opening the mind in various directions and trying out multiple solutions for a problem.
Methods used in convergent thinking involve reorganising the previously tried out techniques and re-applying them along with the stored information.	Here, methods relate to figuring out new procedures to solve a problem despite existing solutions.
This process helps to find out the best possible answer to any problem, which are accurate most of the time and there is no room for ambiguity.	As this process keeps the options open, accurate answers may not be completely identified.
The characteristics of convergent thinking is speed, accurately and logic.	The characteristics of divergent thinking is spontaneous free flowing and non-linear.

Long Answer Type Questions

1. "Entrepreneurial Ideas evolve through a creative process by which creative people germinate ideas, nurture them and develop them successfully". – Justify the statement. **[MODEL QUESTION]**

Answer:

The creative process generally follows the following broad outlines:

1. Idea germination

→ The first stage in the creative process is the idea-germination.

→ This stage is the sowing stage of the process.

2. Preparation

→ Preparation, in the form of education, training and research, is an essential foundation to build creativity.

→ Preparation requires a hard and concentrated look at the problem at hand and its various parameters in order to develop a break-through solution.

→ It is the creative thinker who continues to look for a different and unique solution.

3. Incubation

→ Incubation refers to a time of thought and reflection to allow ideas time to grow without intentional effort.

→ Incubation is a period when the conscious attention is turned away from the current problem at hand.

→ Creative people may initiate different methods to provide incubation period.

→ Incubation time may take a day or even a long period.

→ It is experienced unconscious mind of the creative person is able to handle the problem issue from new angles or into new combinations.

4. Persistence

→ At this state, the decision maker's frame of reference or the problem could be redefined persistently for generating new and different conclusions.

→ Highly committed people remain persistently involved in the area of issue under consideration and remain highly committed to their ideas.

5. Insight

→ This stage is actual point of break-through achieved as a result of preparation, incubation and persistent involvement.

→ Insight is the tentative outcome of the persistent efforts and thinking to the problem under study.

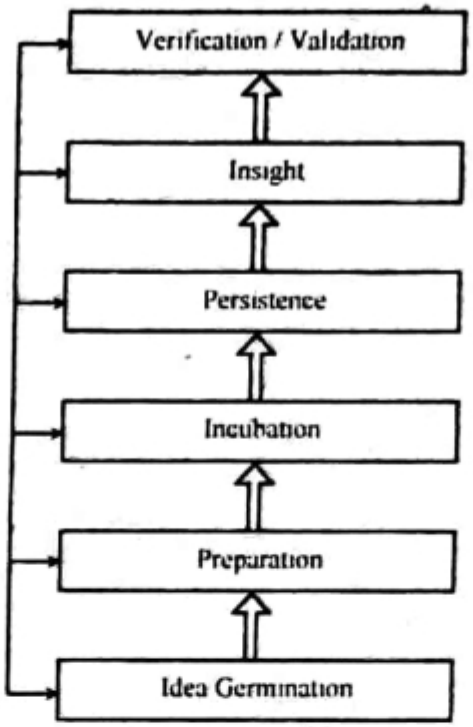
→ At this stage, the creative person believes that he has found a unique solution to the problem in question.

6. Verification/Validation

→ As, a scientist verifies his/her hypothesis through critical analysis or through laboratory procedure, similarly, the insight or the new idea has to be tested to make sure that the said idea is feasible and valid.

→ Verification stage is the development stage of refining knowledge into application.

Diagram showing the creative process



2. Define the Three-component model of creativity. **[MODEL QUESTION]**

Answer:

- **The componential theory of creativity / three-component model of creativity** assumes that all human beings with normal capacities are able to produce at least moderately creative work in some domain, some of the time, and the work environment can influence both the level and the frequency of creative behaviour.
- The three-component model of creativity includes three major components of individual or small group creativity, each of which is necessary for creativity in any given domain. These components are **expertise**, creative **thinking/skills** and task **motivation.**
- The componential theory of creativity suggests that creativity is most likely to occur when people's skills overlap with their strongest intrinsic interests.

Explanation of the three-components

- **Expertise**

→ Expertise is the foundation of all creative work and this component includes memory for factual knowledge, technical proficiency and special talents in the target domain.

- **Creative thinking/skills**

→ This component assumes that a person has some incentive to perform an activity and the performance will be technically good or acceptable, if the requisite expertise is present.

- **Intrinsic Task motivation**

→ This component will determine what the person concerned will actually do.

→ Here, motivation can be driven by deep interest and involvement in the target work or by curiosity, or enjoyment or personal sense of challenge (intrinsic). Again, it may be to achieve a promised reward or meeting a deadline or winning a competition (Extrinsic). However, intrinsic motivation is more conductive to creativity than any extrinsic motivation.

Diagram showing three-component model of creativity

3. a) What is meant by Diffusion of innovation?
b) Explain the factors affecting diffusion of innovation.
c) What are the diffusion/adaptation process? **[MODEL QUESTION]**

Answer:

a) Diffusion of innovation

- The diffusion/consumer adaption process was developed by **E.M. Rogers.**
- The diffusion or adaptation process is similar to that of **product life cycle (PLC).**
- The diffusion process looks at what is happening in the market, that is, buyer behaviour.
- The life cycle concept derives its logical base from the diffusion process.
- Adoption and diffusion of any new product (innovation) slowly develops because of resistance and the time taken for communication of the innovation.
- When early adopters follow the lead given by innovations, adoption process gains momentum and grows rapidly. The peak point arrives when most of the potential buyers have tried the new product.

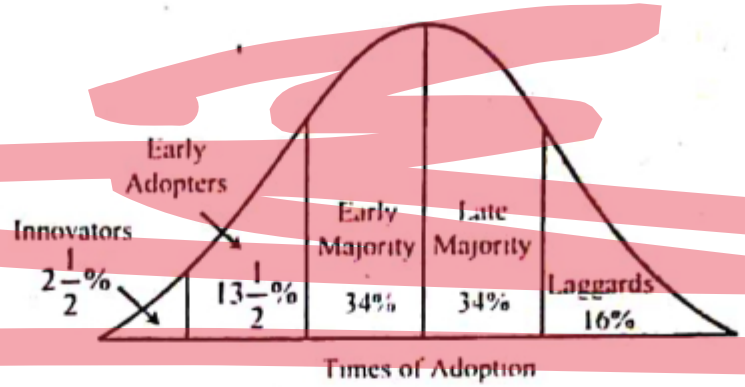


Fig: The Diffusion Process

b) Factors affecting diffusion of innovation:

The factors affecting diffusion of innovation are stated as under:

- **Relative advantage of the new product:** The greater the perceived relative advantage of the new product in relation to the existing one, the sooner the new product will be adopted.
- **Compatibility:** If the new product/innovation fits the values and experiences of potential consumers, the sooner the new product will be adopted
- **Complexity of the product**: It the innovation is complex and difficult to understand or use, the adaptation is taken a longer time.
- **Divisibility:** If the new product/innovation may be tried or used with an option to buy, the adaptation will not take a longer time.
- **Communicability:** If the results of using the new product/innovation can be obtained, observed from verified sources or described to others through demonstration, in such a case, the adaptation will be sooner.

c) Diffusion/Adaptation process:

- Diffusion/Adaptation process refers to the mental process through which an individual passes from first learning about an innovation to final adaptation.
- An adoption process is a process bringing about a change in buyer's attitudes and perception. **Adaptation process covers the following steps:**

1. Awareness:

→ The consumer becomes aware of the new product, but lacks information as to usefulness, qualities, performance, etc of the new product/innovation.

2. Interest:

→ Being aware of the innovation, the consumer demands more information about the new product its utility, its performance and so on. He actively seeks the desired information from sales-persons, opinion leaders, peers and friends etc.

3. Evaluation:

→ The consumer tries to reason through pros and cons the value of the new product to him and the extent to which it is good for him.

→ At this stage, the customer conducts a mental trial of the new product.

4. Trial:

→ The consumer tries the new product on a small scale experiment to improve his/her estimate of its value

5. Adaptation

→ The consumer, now, decides to adopt the new idea or product for continued use.

4. Specify the role of entrepreneur in economic growth of a country like India.

[MODEL QUESTION]

Answer:

The economic development of any country depends on the total activity efforts of all individual citizens, groups, villages, cities, provinces, states and the country as a whole and the Nation in particular. When a young man or woman chooses his or her carrier, they have three options:

(a) To work in an existing organization by joining it through advertising, interview and selection and enjoying a safe life by having a fixed salary at the end of every month.

(b) To be self – employed in a profession like doctors, lawyers, engineers, consultants, politicians.

(c) To be an entrepreneur and be engaged in a business or enterprise of his own by creating a new venture.

An entrepreneur can be defined as one who initiates and establishes an economic activity by setting up his own enterprise, work for himself, produce goods and services by value addition, achieve reputation, money and position by taking a reasonable amount of risk. Whatever a successful entrepreneur does involves the concept of entrepreneurship this is the main field of millions of young boys and girls in all countries where they really create millions of self – employment and offers a multi dimensional society which is progressive, creative and innovated wealth. Today's world in 21st centuries of bridges and buildings, metallurgy like steel, aluminum, alloys pharmaceuticals like bulk drugs, vitamins , capsules and tablets, communications and electronics, millions of shops, kiosks, departmental stores, innumerable shopping malls, shoppers stop, containing cinema halls, eating houses, sports and games, textiles, readymade garments, shoes, toilets and thousands of cosmetics. All these are produced by entrepreneurship of individuals, teams and companies.

IDEA INCUBATION

Multiple Choice Type Questions

1. One of the components of Generic strategy is [MODEL QUESTION]
   a) overall cost leadership b) core competencies
   c) harvesting strategy d) none of these

Answer: (b)

2. BCG stands for [MODEL QUESTION]
   a) Business Company Group b) Boston Consulting Group
   c) Business Control Group d) none of these

Answer: (b)

3. Core competence is [MODEL QUESTION]
   a) What the company used to do exceedingly well
   b) What the company does exceedingly well what the competitors do not do well
   c) What the company can only do

Answer: (b)

4. One of the components of Generic Strategy is [MODEL QUESTION]
   a) Harvesting strategy b) Core competencies
   c) Overall price leadership d) Overall cost leadership

Answer: (b)

5. Overall cost leadership is a part of [MODEL QUESTION]
   a) Porter's Generic Strategy b) Maslow's Motivational Theory
   c) Drucker's Management theory d) none of these

Answer: (a)

6. Portfolio strategy is a part of [MODEL QUESTION]
   a) marketing strategy b) financial strategy
   c) corporate strategy d) none of these

Answer: (c)

7. Which of the following is a force studied under the Porter's 5 forces model? [MODEL QUESTION]
   a) Rivalry between existing sellers in the market
   b) Power exerted by the customers in the market
   c) none of these d) both (a) & (b)

Answer: (d)

8. The incubation stage in creative process refers to [MODEL QUESTION]
   a) conscious search for knowledge
   b) subconscious assimilation of information

c) recognition as being feasible
d) test to prove idea has value

Answer: (b)

9. The McKinsey's 7-S framework for strategic management does not include [MODEL QUESTION]

a) Staff b) Style c) Skill d) Society

Answer: (d)

10. The 'Dog' cell in BCG Matrix denotes [MODEL QUESTION]

a) high growth high market share
b) slow growth high cash reserve
c) high growth low market share
d) slow growth relatively low market share

Answer: (d)

11. When developing the operations strategy for a new manufacturing organization, one of the most important considerations is that [MODEL QUESTION]

a) it requires minimal capital investment
b) it utilizes as much automation as possible
c) it utilizes an equal balance of labour and automation
d) it supports the overall competitive strategy of the company

Answer: (c)

12. Which of these stands for BCG in BCG Matrix? [MODEL QUESTION]

a) Business Core Group b) Business Coordination Group
c) Boston Consulting Group d) Business Communication Group

Answer: (c)

13. What do stars signify in BCG matrix? [MODEL QUESTION]

a) Introduction b) Growth
c) Maturity d) Decline

Answer: (b)

Short Answer Type Questions

1. What is meant by Blue ocean strategy? [MODEL QUESTION]

Answer:

- Blue ocean strategy refers to the simultaneous pursuit of differentiation and low cost to open up a new market space and create new demand.
- Blue ocean strategy is creating and capturing uncontested market space and thereby making the competition irrelevant.
- The idea behind Blue ocean strategy is that every enterprise can achieve higher profit by creating new demand in non-competitive market.

- In blue ocean strategy, the profit is much easier than the rivalry with the competition on the existing market spaces.

Long Answer Type Questions

1. State the significance of Porter's five force model in combating intra-industrial competition. **[MODEL QUESTION]**

Answer:

- **Michael E. Porter** has developed an excellent and comprehensive conceptual framework to analyse the industry structure, assess the nature of the competitive environment and develop competitive strategies.
- Porter, while developing his ideas of industry and competitor analysis and their relevance to the formulation of competitive strategies advocates that a structural analysis of industry be made so as to enable a firm to identify its strengths and weaknesses in the competitive environment.
- According to Porter, the industry structure has a strong influence in the matter of determination of competitive rules of the game as well as strategies potentially available to the firm.
- The significance of Porter's five force model is that the competitive forces shape the strategy adopted and the strategies of rival firms shape competitive forces.
- This analysis is useful for a firm if it takes the result of competitor analysis into account while going for a strategic choice.
- According to **Porter's five-forces model of competition**, the intensity and the state of competition depends on five basic forces which collectively determine the ultimate profit potential in the industry.
- **Porter's five forces model of competition includes**
  i) Rivalry amongst the current competitors
  ii) Threat of new entrants
  iii) Threat of substitutes
  iv) Bargaining power of suppliers, and
  v) Bargaining power of buyers

Porter's 'five forces' are discussed below:

1. Rivalry amongst the current competitors

→ The degree of rivalry amongst different firms is a function of the number of competitors, industry growth, product differentiation, assets intensity and exit barriers.

→ But, the industry growth and the number of competitors are the most influential forces.

→ **For example**, industries with high fixed cost are likely to face price wars when the market is stagnant or over-capacity situations. **Again**, difficulties in exit from an industry intensifies competition

2. *Threat of New Entrants*

→ A threat is a major unfavourable situation in the firm's environment which is likely to cause significant damage to the firm. A threat is key obstacle in the firm's current and future position.

→ The factors that could represent as major threats to a firm's future success are entrance of a new competitor, major technological change, slow market growth and changing regulatory frame-work, etc.

→ Thus, the threat of new entrants may increase the competitive intensity, especially in the matured market situation.

3. *Threat of substitutes*

→ Threat of substitutes also acts a force. Substitute products that satisfy similar needs of the same customer group can also intensify competition.

→ **For example**, old steel tubes are losing markets to PVC tubes and copper has lost the market to aluminium and plastics have also affected the market for steel.

4. *Bargaining power of suppliers*

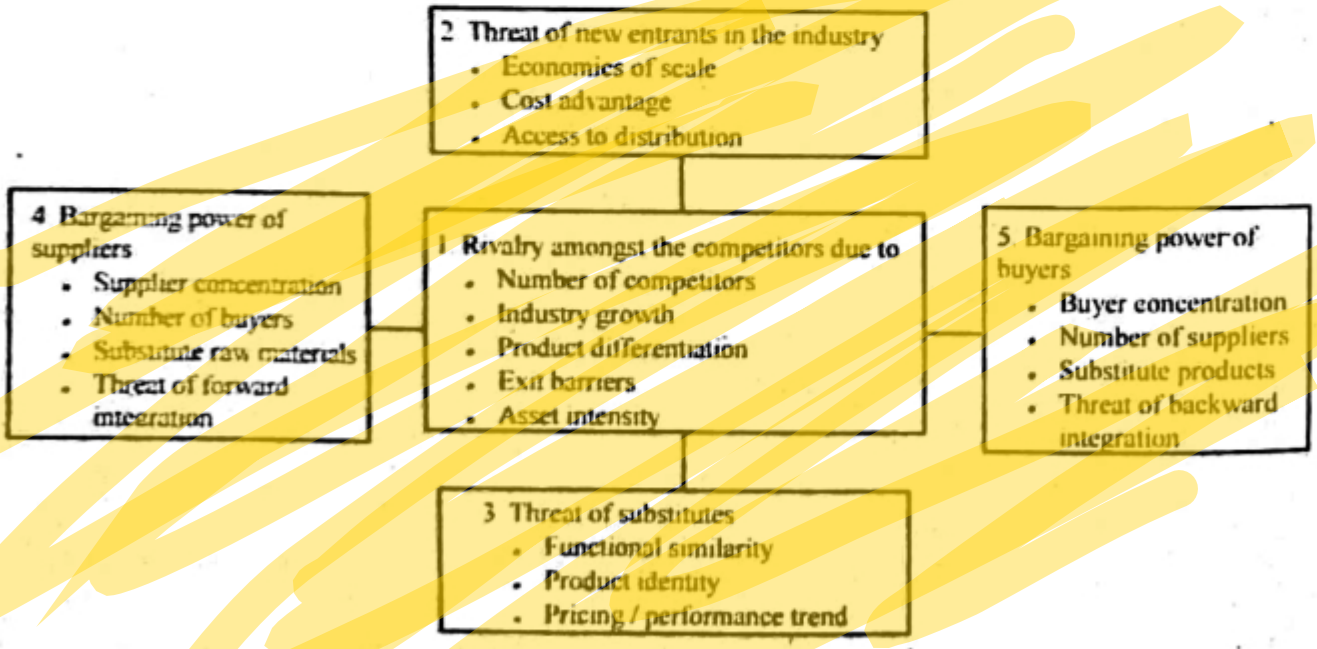
→ Bargaining power of suppliers may take place when a supplier enjoys monopoly, like Indian Oil Corporation (IOC) with regard to furnace oil, or in a case where the switching cost of the buyer is very high.

5. *Bargaining power of buyers*

→ Bargaining power of buyers indicates a situation when the industry's customers/buyers can create a force to the industry to reduce prices of products or supply with extra features at the same price.

→ This situation arises when buyers have choice of substitutes or alternative source of supplies for the same product.

Porter's five-forces model of industry competition



2. Enumerate the factors to be considered in forming the strategic advantage profile of an enterprise. **[MODEL QUESTION]**

Answer:

Factors to be considered in forming the strategic advantage profile (SAP) of an enterprise

- The most critical issue which is at the heart of any corporate strategy is identifying and gaining competitive advantage.
- Each business requires a set of minimum performance standards and capabilities, which are said to be key factors of success, and these are required to gain competitive advantage. Key factors of success help to assess the strength and weaknesses in relation to meeting the minimum requirements for success.
- The key factors for success of different industries may be based on different functional areas like engineering, marketing, finance.
- Strategic Advantage Profile (SAP) tries to focus the organizational strength and weakness in relation to certain key factors of success within a particular industry.
- A business firm, on the basis of the information presented through the key factors of success, can easily construct a strategic advantage profile, which in return focus the advantages available to a business firm in key factor areas with its impact on its functioning.
- The factors considered in framing the SAP, in the case of a motor cycle
- manufacturing company, may be the following:

1. Engineering	→ Fuel efficiency → Design → Aesthetics
2. Marketing	→ Range of products → Promotional efforts → Price → Channels of distribution
3. Finance	→ Cost of capital → Financial planning → Skills relating to fund raising
4. Human Resource	→ Recruitment, selection, training, development → HR skills and motivation → Industrial relations

ENTREPRENEURIAL MOTIVATION

Multiple Choice Type Questions

1. Which of the following psychological factors contribute to entrepreneur motivation? [MODEL QUESTION]
   a) Desire for taking personal responsibility
   b) Keen interest in situations involving moderate risk
   c) Organizational skills
   d) All of these

Answer: (d)

2. Beliefs generate a drive for entrepreneurial growth as per theory developed by [MODEL QUESTION]
   a) Schumpeter
   b) Weber
   c) Mc Clelland
   d) Hoselitz

Answer: (c)

3. Achievement theory is given by [MODEL QUESTION]
   a) Schumpeter
   b) Druker
   c) Marshall
   d) McClelland

Answer: (d)

4. The theory of religious belief was given by [MODEL QUESTION]
   a) Karl Marx
   b) Max Weber
   c) Peter Drucker
   d) Walker

Answer: (b)

5. Which of the following is not an external motivating factor? [MODEL QUESTION]
   a) Enterprising attitude
   b) Encouragement from big business houses
   c) Govt. support and assistance
   d) Availability of factor of production

Answer: (d)

6. Which of the following is an internal motivating factor? [MODEL QUESTION]
   a) Govt. assistance
   b) Availability of labour and raw materials
   c) Previous experience
   d) Promising demand for the product

Answer: (c)

defines generalizable patterns in the nature of inventive solutions and the characteristics of the problem that these inventions have overcome.

- TRIZ presents a systematic approach for understanding and defining challenging problems as difficult problems require an inventive solution.
- TRIZ provides a range of strategies and tools for finding these inventive solutions.
- The focal point of TRIZ basis analysis is to apply systematically the strategies and tools to find out superior solutions that overcome the need for a compromise or trade-off between the two elements.
- TRIZ includes a practical methodology, tool sets, a knowledge base and model based technology for generating innovative solutions for problem solving.
- TRIZ is useful for problem formulation, system analysis, failure analysis and patterns of system evolution.
- A number of TRIZ-based computer programmes have been developed to provide assistance to engineers and inventors to find out inventive solutions for technological problems.

2. Discuss McClelland's N-Arch Theory. How can this theory be used for studying entrepreneurial motivation? **[MODEL QUESTION]**

Answer:

1st Part:

Mc. Cleland's Theory of Achievement

David c. Mc Cleland and his research activities propounded a theory of entrepreneurship where he has identified "Achievement" as the main cause of drive for entrepreneurship. He felt that any entrepreneur would feel a great satisfaction, a sense of achieving something through his own initiative and effects, something others will appreciate as a rare achievement which a person cannot generally receive. This feeling of achievement within himself acts as the main driving force which makes him identify or select a line of business, may be a new product, process equipment or service, on which he will prepare a Project Report, negotiate with a commercial bank and financial institution for working capital and term loan, buy plant and machinery, start production and quality control and ultimately market his products and service to collect more money than he invested and thereby develops a feeling of great achievement which he will share with his family, friends and associates.

- **David C. McClelland**, a Harvard Psychologist, has contributed to the understanding of motivation by identifying three types of basic motivating needs.
- He classified these needs as (i) *need for power* (n/PWR), (ii) *need for affiliation* (n/AFF), and (iii) *need for Achievement* (n/ACH).
- Considerable research has been done by McClelland and his associates with respect to three socially-developed motives in different individuals, i.e., affiliation, power and achievement.
- Of these three needs, McClelland and his associates have done substantial research, especially on the need for achievement, because any organized activity represents

groups of individuals working together for achieving organizational goals, the need for achievement is of great importance.

2nd Part:

McClelland's N-Arch theory of achievement can be very aptly used for studying entrepreneurial motivation because in any society business achievement bestows a special position and respect to a young entrepreneur in the field of clamber of commerce, delegation to Govt., social status in the matrimonial market, high position in club, association society, institute etc. These things normally easily motivates a young entrepreneur towards business development, doing hard work, taking risk, earning more and more money and enjoying higher and higher social and economic status.

INFORMATION

Multiple Choice Type Questions

1. MSME-DI is a / an [MODEL QUESTION]
   a) All India level organization
   b) State Level organization
   c) District Level organization
   d) Block Level Organization

Answer: (a)

2. The institution that is related with the growth of Khadi industries: [MODEL QUESTION]
   a) KIDS b) KVIC c) KBC d) KMDC

Answer: (b)

3. National Institute for Entrepreneurship and Small Business Development provides [MODEL QUESTION]
   a) seed capital for entrepreneurs
   b) start up finance for entrepreneurs
   c) training to entrepreneurs
   d) all of these

Answer: (c)

4. Small Industries Service Institute (SISI) was established is [MODEL QUESTION]
   a) 1956 b) 1952 c) 1982 d) 1990

Answer: (a)

5. EXIM (Export & Import Bank of India) started functioning from [MODEL QUESTION]
   a) March 1982 b) May 1990 c) July 1996 d) May 1993

Answer: (a)

6. Small scale industry is usually [MODEL QUESTION]
   a) Labour intensive
   b) Capital intensive
   c) Technology intensive
   d) None of these

Answer: (a)

7. Khadi and Village Industries Corporation is [MODEL QUESTION]
   a) District level institution
   b) All India institution
   c) State level institution
   d) Village level institution

Answer: (b)

8. Khadi and Village Industries Commission is a/an [MODEL QUESTION]
   a) All India Institution
   b) State Level Institution
   c) District Level Institution
   d) Village Level Institution

Answer: (a)

- Angel financers usually invest in ventures related to the fields in which they have been successful themselves. They maintain close contact with the ventures they finance and can provide first time entrepreneurs with invaluable know-how as well as capital.
- Angel investors often work in groups to improve the efficiency of their due diligence and to allow them to complete larger deals.

Long Answer Type Questions

1. Discuss the role of Government in promoting entrepreneurship.
[MODEL QUESTION]

Answer:
Government has a big role in developing entrepreneurship in the country as well as every state for various reasons:

a) Govt. can create jobs for a maximum of 2 – 5% of the young people, balance 95 -98 % people depend on themselves either for a professional carrier or for creating self – employment along with job opportunities of hundreds and thousands of people.
b) For this govt. has a big role e.g.. offering infrastructure to all prospective entrepreneurs e.g.. land, building, water, electricity etc either separately or in the form of "Industrial estates" where all facilities are available at one place.
c) Government must arrange for loan of different amount with different interest rates and various forms of facilities and conditions. Government loans can be given both in cash, kind, and subsidies, non – refundable and as grant. This should be available on the project or entrepreneurship basis or on interest and hypothecation basis which create problems for entrepreneurs on the beginning.
d) Bank loans also should be facilitated by Government so that govt. at times can be the guarantor for the loan.
e) Technology should be made available by Government either from its own sources e.g.. existing Government factories or from universities and consulting firms.
f) Marketing facilities should be created by Government for marketing various products like agricultural, mineral, metallurgical, chemical, glass and ceramic, cotton, textile, electronic computer and various services and financial products.
g) Government should also help the new entrepreneurs to import and export various products to create foreign market as well as improve their other products with foreign components.
h) Government should offer training facilities to prospective entrepreneurs in technology, labour, finance, marketing, computer as well as Business Management.
i) Government should offer subsidy as well as various facilities through SISI, C &SSI, KVIC, SIDBI, WBFC, WEBCON, and WBSIDC.
j) Above all govt. role is to promote, develop and when they approach the Government, they should co-operate in all possible ways.

2. Discuss the role played by the support institutions in promoting entrepreneurship development in India. [MODEL QUESTION]

Answer:

An entrepreneur should not only have his own capability to build up an enterprise, he must have knowledge and information about the world, his country, state, district, area and his line of business. For instance if an entrepreneur is making break-fast food materials he should know who else is making similar products in his area or in the district or state, the quality, the price structure, packaging etc. of these products, delivery and distribution system etc.

In addition he should also have the full information on the Government schemes & projects, banks financing projects, SISI & C & SSI's assistance available for setting up, developing, promoting, and marketing & financing of SME's. The information relating to these relate to:

a) **SISI: Small Industries Service Institute offering consultancy**. Project Report preparation & vetting, training in class & workshop, recommendation to the Bank etc.
b) **C&SSI: Cottage & Small Scale Industries**, department of State Government who have many small schemes of loan for land, building, plant, machinery, training, etc.
c) **NSIC:** For hire-purchase of machines.
d) **SIDBI: Small Industries Development Bank of India,** for development of small industries as Bank has been set up.
e) **State Finance Corporation:** For financing small scale industries loan up to Rs. 50 lakhs is given.
f) **Web Con.: West Bengal Consultancy Organization,** Set up a consultancy organization by State Government & Reserve Bank.
g) **PMRY:** Prime Minister's Rojgar Yojana
h) **NABARD: National Bank for Agriculture & Rural Development** Project
i) **SHG: Self Helf Group,** for loan to self-help group.
j) **Industrial Estate (WBSIDC): West Bengal Small Industries Development Corporation,** for ready Shed, Power, Water to small scale industry.
k) **Consulting Engineering Group:** Small Companies who syndicate loans from Bank and prepares project report, financial project etc.
l) **WBFC: West Bengal Finance Corporation**

All these information must be at the finger tips of all entrepreneurs.

3. Focus on the role of khadi and Village Industries in Entrepreneurship scenario. Specify the functions of KVIC regarding this context. [MODEL QUESTION]

Answer:

1st part:

Role of khadi and Village Industries

Mahatma Gandhi, the so called father of the Nation recommended Khadi & Village industries for the development of Rural India. This idea is very much prevalent and the Government have helped to set up a Commission or Board for the development of Khadi i.e., hand over cloths by Charka and other rural and village industries like silk, terra cotta,

Bee keeping etc. for creating self-employment for educationally and economically backward boys and girls of the rural areas. Wardha in Maharastra has been the head quarters for KVIC run by a Commission which has now got at least one branch in all states having a large marketing outlet for silk, khadi clothes, honey, various garments, ghee etc. Though this line is not comparable to computer, information technology and electronic line, it has a great self-employment potential individually or by forming SHG (Self help group or cooperatives) and investment for such products is comparatively low.

2nd part:

Some of the major functions of KVIC are:

1. To plan and organize training of persons employed or desirous of seeking employment in Khadi and Village Industries.
2. To build up reserves of raw materials and supply them to persons engaged or likely to be engaged in production of handspun yarn of Khadi or Village Industries at such rates as the commission may decide.
3. To encourage and assist in the creation of common service facilities for the processing of raw materials or semi finished goods and for otherwise facilitating production and marketing of Khadi or products of village Industries.
4. To promote the sale of marketing of Khadi or products of village Industries or handicrafts and for this purpose forge links with established marketing agencies wherever necessary and feasible.
5. To encourage and promote research in the technology used in Khadi and village Industries, including the use of non-conventional energy and electric power with a view to increasing productivity.
6. To provide financial assistance to institutions or persons engaged in the development and operation of Khadi or Village Industries and guide them through supply of designs, prototypes and other technical information for the purpose of producing goods and services for which there is effective demand in the opinion of the commission.
7. To establish and maintain separate organizations for the purpose of carrying out any or all of the above matters; to promote and encourage cooperative efforts among the manufactures of Khadi or persons engaged in Village Industries.
8. To set up standards of quality and ensure that products of Khadi and Village Industries do conform to the said standards.

4. Write short notes on the following: **[MODEL QUESTION]**

a) SIDBI

b) Entrepreneurship Development Programme

c) Role of DGFT

d) Venture capital

Answer:

a) SIDBI: Small Industries Development Bank of India (SIDBI) is a Central Public Sector financial Institution promoted by the Government of India for promotion and growth of Small scale Industries in India. Its registered and corporate office is at

Lucknow, UP. It refinances small scale Industries in India for its development, modernization and growth.

b) Entrepreneurship Development Programme: Entrepreneurship Development Programme also known as EDP is the training program, seminar, colloquium and various brainstorming sessions are organized by Govt. of India through ministry of industry in MSME development institute in all stage. This program is also conducted by private professional individuals, banks, consulting firms etc. where the programme consists of: (a) project selection, (b) project report preparation, (c) present competition and availability of the same product, (d) risk taking capacity, (e) banking and finance, (f) marketing, (g) plant and machinery, (h) dryer, (i) kilns, (j) furnaces, (k) production management, (l) staff recruitment, (m) packaging, (n) storage, (o) dispatch, (p) exports, (q) balance sheets, (r) profit and loss etc.
In addition to these trainees of the above EDP programme entrepreneurs also grow from business families, risk taker and innovative persons and young boys and girls who want to do something for themselves.

c) Role of DGFT:

- **DGFT** (Director General of Foreign Trade) is a government organisation in India responsible for the formulation of exim guidelines and principles for Indian importers and Indian exporters
- Before 1991, **DGFT** was known as the **CCI&E** (Chief Controller of Imports and Exports)
- The primary role of the **DGFT** is promotion of India's foreign trade by implementing various export promotion schemes.
- In the post **WTO** liberalised economic scenario, **DGFT** is required to play a more effective and wide ranging role as a trade facilitator.
- **DGFT** is to act as a resource centre for trade information as a monitoring agency for imports and exports and as a support organisation for **WTO** negotiations.
- Further, **DGFT** is to implement of the Exim policy or Foreign Trade Policy of India by introducing various schemes and guidelines through its network of **DGFT** regional offices through-out the country. **DGFT** perform its role and function in coordination with state governments and all the other departments of the Ministry of commerce and Industry, Government of India.

d) Venture capital

The **Indian Private Equity and Venture Capital Association** was established in 1993 and is based in New Delhi, the capital of India. IVCA is a member based national organization that represents Venture capital and Private equity firms, promotes the industry within India and throughout the world and encourages investment in high growth companies. It enables the development of venture capital and private equity industry in India and to support entrepreneurial activity and innovation. The IVCA also serves as a powerful platform for investment funds to interact with each other. In 2006, the total

amount of private equity and venture capital in India reached US$7.5 billion across 299 deals.

IVCA members comprise Venture capital firms, Institutional investors, Banks, Business incubators, Angel investor groups, Financial advisers, Accountants, Lawyers, Government bodies, Academic institutions and other service providers to the venture capital and private equity industry. Members represent most of the active venture capital and private equity firms in India. These firms provide capital for seed ventures, early stage companies, later stage expansion, and growth finance for management buy-ins/buy-outs of established companies. So far, the biggest member firm of IVCA is ICICI Ventures which currently has a $750 million fund, and has $450 million under management.

CLOSING THE WINDOW

Multiple Choice Type Questions

1. One of the components of generic strategy is [MODEL QUESTION]
   a) Harvesting Strategy b) Core competencies
   c) Overall price leadership d) Overall cost leadership

Answer: (b)

2. Overall cost leadership is a part of [MODEL QUESTION]
   a) Porter's Generic Strategy
   b) Maslow's motivational theory
   c) Drucker's management theory
   d) None of these

Answer: (a)

3. Which of the following is a force studied under the Porter's 5 forces model? [MODEL QUESTION]
   a) Rivalry between existing sellers in the market
   b) power exercised by the customers in the market
   c) both (a) and (b)
   d) none of these

Answer: (c)

Short Answer Type Questions

1. State the purpose of conducting a competitor analysis. [MODEL QUESTION]

Answer:

The purposes of conducting a competitor analysis are stated as under:

1. To determine each competitors probable reaction to the industry as well as the environmental changes.
2. To articulate response of each competitor to the likely strategic choices /moves by the other firms and
3. To develop a profile of the nature and success of the possible changes each competitor might undertake.
4. Bargaining power of substitutes and,
5. Bargaining power of buyers.

Long Answer Type Questions

1. Discuss the changing role of the entrepreneurs. [MODEL QUESTION]

Answer:

- Entrepreneurs play an influential role in the economic growth and standard of living of the country.

1. Creation of wealth and sharing

- By establishing the business entity, the entrepreneurs invest their own resources and attract capital from investors, lenders and the public.
- This mobilizes public wealth and allows people to benefit from the success of entrepreneurs and the growing business.
- This kind of pooled capital results in wealth creation and distribution – being the basic imperatives and goals of economic development.

2. Creation of job opportunities

- Entrepreneurs are by nature job creators. They provide employment opportunities to the multiple job seekers.
- This creation of job opportunities is one of the basic goals of economic development of the country

3. Balanced Regional Development

- Entrepreneurs setting up new business and industrial units help in regional development by locating business units in less developed and backward areas.
- The growth of industrial units in these areas leads to infrastructure development like better roads, rail link, airports, electricity, water supply, schools, hospitals, shopping malls and other private and public services.

4. Increase in standard of living

- Entrepreneurs play a pivotal role in increasing the standard of living in a community.

5. Exports for access to bigger markets

- Exports leads to currency inflows and access to the latest cutting-edge technologies and processes being used in more developed foreign markets.
- This in turn leads to more stable business revenue during economic downturns in the local economy.

6. Contributing to the community development

- Entrepreneurs, through community development projects, develop infrastructure for education and training, health care and other public services. This will help to build pool of educated and skilled workforce.

7. Entrepreneurs – as National treasure

- Entrepreneurs create all wealth, all jobs, all opportunities and all property in the nation – to the health of the economy.

2. Highlight the different generic strategies that can be used for sustaining competitive advantage. **[MODEL QUESTION]**

Answer:

1st Part:

Different Generic Strategies:

In order to gain competitive advantage, **Michael Porter** has suggested a **Three Generic Strategies Framework.**

According to **Porter**, there are three potentially successful generic strategic approaches to cope with the five competitive forces as well as gain competitive advantage. These are:

- Overall cost leadership
- Differentiation
- Focus.

OVERALL COST LEADERSHIP

- In this strategy company makes all possible attempts to achieve the lowest costs in production and marketing
- The aim is to gain a large market share.
- Efficiency is the keyword guiding all decisions to keep the costs low.
- **Bajaj Auto Ltd.** and **Telco** appear to be following this strategy in India.

DIFFERENTIATION

- Here, the aim is to achieve class leadership by creating something, which is perceived to be unique. It can be achieved by creating highly differential products and marketing programmes — like design or brand image, customer service or dealer network, or any other feasible dimension.
- Companies pursuing this strategy have major strengths in R&D, design, quality control and marketing.
- **Bata Shoes, OTIS Elevators, CINI FANS** are some examples where this strategy seems to the dominant guiding force.

FOCUS

- The assumptions in **Focus** is that a firm should be able to serve a narrow strategic target effectively and efficiently. As a result, the firm achieves either differentiation from meeting the need of a particular target segment better, or lower costs in serving the target, on both.
- **'Genteel'**, a liquid detergent for expensive clothes by **Swastik** and **Ponds Talcum Powder** are some **examples** for this strategy.

2nd Part:

Business firms usually try **to build competitive advantage** by initiating certain unique steps that help them gain an edge over their rivals in attracting customers. **Competitive advantage** is a kind of distinctive competence in some functions or area over the

competitors. Thus, the three generic strategies act as an useful approach in formulating business level strategies.

3. How to maintain competitive Advantage from the point of an entrepreneur? **[MODEL QUESTION]**

Answer:

Maintaining competitive advantage

- Maintaining competitive advantage for an entrepreneur requires to improve and innovate in every scenario that he is to face, relying on intuition and confidence he has earned from the performances over the years.
- However, there are some tips by which an entrepreneur can maintain competitive advantage

1. Focus on developing in your expertise: Focus on developing in your expertise only – rather than trying to be the best at everything.
2. Work with the clients who will give your best chance at success: Pick your clients wisely. Rather, the idea is to work not just with any client, but only the ones you know you are best suited as well as qualified to help.
3. Challenge yourself to improve every day: Once you achieve great results for one client, strive to achieve better results for the next one. Try to learn from your success and failures so that you can achieve and maintain a sharp competitive edge.
4. Pace of innovation – the fundamental determinant of competitiveness:

You always need to be able to adapt knowledge to new situations for maintaining competitive advantage.

APPLICATION AND PROJECT REPORTS PREPARATION

Multiple Choice Type Questions

1. Project report has to be prepared according to the guidelines provided by [MODEL QUESTION]
   a) State Governments
   b) Planning commission
   c) Reserve Bank of India
   d) Ministry of Industry

Answer: (d)

2. Why should an entrepreneur do a feasibility study for starting a new venture? [MODEL QUESTION]
   a) To see if there are possible barriers to success
   b) To identify possible sources of funds
   c) To estimate the expected sales
   d) To explore potential customers

Answer: (a)

3. Technical/operational feasibility analysis collects data on which of the following parameters? [MODEL QUESTION]
   a) Material availability
   b) Plant capacity
   c) Material requirement planning
   d) All of these

Answer: (d)

4. A project report includes [MODEL QUESTION]
   a) technical aspects
   b) economic aspects
   c) both (a) & (b)
   d) neither (a) nor (b)

Answer: (c)

5. Feasibility study is conducted by identifying the [MODEL QUESTION]
   a) investment opportunities
   b) pre-investment phase
   c) effectiveness of the project
   d) none of these

Answer: (c)

6. D.P.R. stands for: [MODEL QUESTION]
   a) Detailed Planning Report
   b) Decent Project Report
   c) Deal for Project Report
   d) Detailed Project Report

Answer: (d)

7. Status report of a project is prepared during [MODEL QUESTION]
   a) Defining stage
   b) Planning stage
   c) Execution stage
   d) Delivery stage

Answer: (c)

Short Answer Type Questions

1. Write a note on Detailed Project Report (DPR). **[MODEL QUESTION]**

Answer:

Detailed project report (DPR) is the further step of Feasibility study report in firming up the proposal. When an investment proposal has been approved on the basis functional report and the proposal is a major proposal, it would be necessary to detailed project report to firm up the proposal for the capital cost as well as the various facilities. It includes...

- Examination of technological parameters.
- Description of the technology to be used.
- Broad technical specification.
- Evaluation of the existing resources.
- Schedule plan.
- General layout.
- Volume of work.

Hence these reports are to be made before investment is made into project. Thus formulation of investment is based on the studies is made. These can be considered as pre-investment decision. Detailed project report is prepared only for the investment decision-making approval, but also execution of the project and also preparation of the plan. Detailed project report additionally includes that is contents in addition to Feasibility study reports are.

- Project description.
- Planning and implementation of the project.
- Specifications.
- Layouts and flow diagrams.

Detailed project report is a complete document for investment decision-making, approval, planning whereas feasibility study report is a base document for investment decision-making. Detailed project report is based document for planning the project and implementing the project.

2. State the contents of the feasibility report for a project. **[MODEL QUESTION]**

Answer:

No two feasibility studies have identical components. However, there are certain critical aspects that must be present in a good feasibility report.

These aspects include:

The nature of the business, Management, Teams, Financial and Economic Analysis and Marketing plan. In other words, the major areas covered by a **feasibility study** can be divided into nine major areas namely:

1. Introduction
2. Description of the business
3. Market consideration – A preliminary Evaluation

4. Management Team
5. Technical Specifications and Production plan
6. Marketing Plans
7. Examination of the critical risks and problems
8. Financial and Economic plans
9. Evaluation and conclusion

3. What is project appraisal? Explain the various aspects covered in it.
[MODEL QUESTION]

Answer:
Project appraisal is the structured process of assessing the viability of a project or proposal. It involves calculating the feasibility of the project before committing resources to it. It is a tool that companies use for choosing the best project that would help them to attain their goal. Project appraisal often involves making comparison between various options and this is done by making use of any decision technique or economic appraisal technique. It is a systematic and comprehensive review of the economic, environmental, financial, social, technical and other such aspects of a project to determine if it will meet its objectives.
Project appraisal is a tool which is also used by companies to review the projects completed by it. This is done to know the effect of each project on the company. This means that the project appraisal is done to know, how much the company has invested on the project and in return how much it is gaining from it.

Process of project appraisal
The process of project appraisal consists of five steps:

- Initial Assessment
- Defining problem and long-list
- Consulting and short-list
- Developing options
- Evaluate alternatives
- Comparing and selecting project

The process of appraisal generally starts from the initial phase of the project. If the appraisal process starts from an early stage, then the company will be in a better position to decide how capital should be spent in the project and also it will help them to make the decision of not spending too much or stopping a project that is not economically viable.

Types of project appraisal

- Technical appraisal
- Project appraisal
- Commercial and marketing appraisal
- Financial/economic appraisal
- organisational or management appraisal
  - Cost-benefit analysis
- Economic appraisal

- Cost-effectiveness analysis
- Scoring and weighting

Appraisal of projects can be done by many ways, but the most common of them are financial and economic appraisal.

In case of financial project appraisal, the company reviews the cost of the project and the expected revenues that will be generated by the project. This type of appraisal helps the company to prevent overspending on a project. It also helps in finding certain areas where alterations can be done for generating higher revenues.

Under economic appraisal, the company mainly focuses on the total benefit of the project and less on the costs spent on the project. Other than these two types of appraisal, there are also other types of project appraisal which include technical appraisal, management or organizational appraisal and marketing and commercial appraisal.

Long Answer Type Questions

1. Discuss in detail the different constituents / sections of a project report.
[MODEL QUESTION]

Answer:

There is no substitute for a well-prepared business plan or project report and also there are no short-cuts to preparing it. The more concrete and complete the business plan, the more likely it is to earn the respect of outsiders and their support in making and running an enterprise. Therefore, the project report needs to be prepared with great care and consideration. A good project report should contain the following contents:

1. ***Introduction and General Information:*** Information on product profile and product details which the entrepreneur proposes to make.
2. ***Promoters/ Entrepreneurs:*** His/her educational qualification, work experience, project related experience.
3. ***Area and Location:*** Exact location of the project, lease or freehold, locational advantages and disadvantages.
4. ***Land, Shed and Building:*** Land area, construction area, type of construction, cost of construction, detailed plan and estimate along with plant layout. If a shed is available in an industrial estate many facilities are available at one place ready for use.
5. ***Production Technology:*** Description of production process, process chart, technical know how, technology, alternatives available, production programme.
6. ***Plant, Machinery and Furnaces:*** Details of machinery required, capacity, supplies, cost, various alternatives available, cost of miscellaneous assets.
7. ***Utilities and services:*** Water, Power, steam, compressed air requirements, cost estimates, sources of utilities.
8. ***Logistics, Transport and Communication:*** Mode, possibility of getting, costs.
9. ***Raw Materials, Recipe and Formulae:*** List of raw material required by right quality and quantity, sources of procurement, cost of raw material, tie-up arrangements, if any, for procurement of raw material, alternative raw materials etc.

10. ***Human Resource:*** Manpower requirement for skilled and semi-skilled, sources of manpower supply, cost of procurement, requirement for training and its cost.
11. ***Final Products/ Service:*** Product mix, estimated sales, distribution channels, competitions and their capacities, product standard, input-output ratio, product substitute.
12. ***Sales and Marketing:*** End-users of product, distribution of market as local, national, international, trade practices, sales promotion devices, proposed market research.
13. ***Requirement of Working Capital:*** Working capital required, sources of working capital, need for collateral security, nature and extent of credit facilities offered and available.
14. ***Requirement of Capital:*** Break-up of project cost in terms of costs of land, building, machinery, miscellaneous assets, preliminary expenses, contingencies and margin money for working capital, arrangements for meeting the cost of setting up of the project.
15. Cost of Production and Profitability for first ten years.
16. Break-Even Analysis and Profitability
17. Schedule of Implementation

2. Prepare an imaginary project report, assuming that the new entrepreneur wants to enter into the field of Detergent Powder. [MODEL QUESTION]

Answer:

Nirma was the pioneer in the large scale marketing in the market for detergents. Since then washing and detergent powders have witnessed an unexpected rise in demand taking inspiration from Nirma's success, many companies have entered into the market now, some of the established brand names in the field of detergents include, Nirma, Wheel, Rin Surf, Key, Ariel, Henko, Sasa etc. Through the penetration of mass media and the extent of advertisement on television and *radio there names are now not alien even in remotest villages. The demand has increased considerably over the years and it is expected to go even higher.*

What is a Detergent?

Primarily, a detergent can be any substance that cleans dirt and grime that is settled over any surface. Synthetic detergents are a type of detergent that are quite different from others as these produce more form and moreover there is less tension created on the dirty surface. The detergent enters the surface much faster after emulsification taker place. So with these detergents the cleaning process is quicker and much stronger.

Raw Materials in Detergent Powders

The main raw materials used in the making of detergent powders are as follows:

1. Soda ash (Sodium Carbonate)

Soda ash depresses acid slurry and makes the washing process alkaline. Soda ash is a low priced sail used to break the dirt.

2. Sodium Perborate

Sodium perborate acts as a high bleach and also retains the colours of the particles. It also breaks up the dirt particles.

3. Carboxy Methyl Chloride (Cellulose)

This prevents the dirt from resetting on the surface of the cloth and is particularly useful for cotton clothes.

4. Perfume

Perfumes and aromatic mixture are used in detergent to subside the intense smell of detergent ingredients. Main perfumes which are used in the detergent powders are p Methoxy, P Methyle, Di- oxide, Musk Ketone etc.

5. Colour

Coloured detergents are more preferred than white ones. Copper phthalocyamine is commonly used as it blocks light and temperature.

Lather Producing Chemical

This chemical is required to produce lather and also enhances the cleaning capacity of the detergent.

Production Process of the Detergent

The process of production of detergents is actually quite an easy process and can be undertaken without any special training.

Financial Aspects of the Unit

Working Place

A work- place of about 800 square feet is required for setting up this unit.

Machines and Equipments

Sl. No.	Machine details	Cost (Rs.)
1.	Mixer (with motor) Sigma type	35000
2.	Sealing Machine for Polybags	2250
3.	Balance and weights	3125
4.	Other Equipments (for mixing)	2500
5.	Installation charges@ 12.50	4437.5
	Total	**47312.5**

Raw Materials

Sl. No.	Raw Materials	Quantity (Kg.)	Cost (Rs.)
1.	Soda Ash	12000	91500
2.	Acid Slurry	1200	54000
3.	Soap stone	3300	4125
4.	Sodium Chloride	750	1000
5.	Carboxy Methyl Chlorine	750	8750
6.	Colour	4	1875

7.	Parfume	8	3750
8.	Packing Material		5000
	Total		**170000**

Utilities (12 months)

1.	Electricity	6250
2.	Water	1250
	Total	**8500**

Salaries/ Wages (12 months)

Sl. No.	Details	No.	Salary (Rs.)	Total (Rs.)
1.	Skilled worker	1	1500	18000
2.	Unskilled worker	1	1125	13500
3.	Office worker	1	1000	12000
4.	Social Emoluments (@ 20% of total amount)			8700
	Total			**52200**

Miscellaneous Expenses (12 months)

Sl. No.	Details	Rs.
1.	Rent	15000
2.	Stationery & Postage	2500
3.	Pantry & Maintenance	3000
4.	Insurance	2500
5.	Others	3750
	Total	**26750**

Working Capital (Per Month)

Sl. No.	Details	Cost (Rs.)
1.	Raw Materials	14167
2.	Utilities	708
3.	Salary	4350
4.	Miscellaneous Expenses	2229
	Total	**21000**

Total Capital Investment

1.	Machines/ equipments	47312.5
2.	Miscellaneous Fixed Assets	6250
3.	Working Capital (for 3 months)	64362
	Total	**118000**

PMRY Loan required for the Unit

1.	Bank Loan (95%)	112028.25
2.	Margin Money by entrepreneur (5%)	5896.25
	Total	**118000**

Annual Production Cost

1.	Total Working Capital	257448
2.	Depreciation of Machines and equipments (10%)	4731.25
3.	Interest over the Bank Loan @ 15.5%	17364.25
	Total	**280000**

approx

Total Annual Cost

Around 18,000 kg. Would be sold @ Rs.20 kg. fetching an annual income of Rs. 3,60,000/-

Profit Analysis

1.	Total Annual Profit (approx)	80000
2.	Profit (Per Month)	6000
3.	Break Even Point	35%

PROJECT MANAGEMENT

Multiple Choice Type Questions

1. "Commissioning of a project" [MODEL QUESTION]
   a) Precedes "installation of the project"
   b) Succeeds "installation of the project"
   c) Has no temporal relationship with installation of the project
   d) The relationship depends on the specific situation

Answer: (a)

2. The first stage of the project development cycle is [MODEL QUESTION]
   a) operation phase b) investment phase
   c) audit phase d) pre-investment phase

Answer: (d)

3. Which software is not used in project management? [MODEL QUESTION]
   a) PRIMAVERA b) MS PROJECT c) PRISM d) LOTUS

Answer: (d)

4. In project management PERT refers to [MODEL QUESTION]
   a) Project Energy Rating Time
   b) Project Energy Rating Terms
   c) Program me Evaluation and Review Technique
   d) Petroleum Energy Revolution Technique

Answer: (c)

5. Project "crashing" means [MODEL QUESTION]
   a) Failure of a project
   b) Time-cost trade off
   c) Breaking of the complete project into sub-parts
   d) Both (b) and (c)

Answer: (b)

6. Which of these instruments is used for financial appraisal of a project? [MODEL QUESTION]
   a) Current ratio b) Acid-test ratio c) DCF d) Debtor-period

Answer: (c)

7. Which of the following instruments is best used for financial appraisal and selection of a project? [MODEL QUESTION]
   a) Pay-back period b) IRR c) ROI d) Margin

Answer: (b)

8. Programme Evaluation and Review Technique (PERT) uses [MODEL QUESTION]

a) Multiple time estimates
b) Multiple cost estimates
c) Resource smoothing
d) None of these

Answer: (a)

9. Which of the following is referred to as internal Rate of Return (IRR) asapplicable for financial appraisal of Hospital Project? [MODEL QUESTION]

a) Simple interest on investment
b) Compound interest on investment
c) Inverse rate of annual simple interest
d) Inverse rate of annual compound interest

Answer: (d)

10. What is demurrage on Railway wagons? [MODEL QUESTION]

a) Damage charge
b) Detention charge of wagons
c) Insurance charge on wagon
d) Ground rent charge

Answer: (b)

11. Resource leveling is synonymous with [MODEL QUESTION]

a) Resource smoothing
b) Limited resource allocation
c) Leveling the quality of resources of a similar project
d) None of these

Answer: (a)

12. Which attachment to the project overview statement shows that the proposed project is financially viable? [MODEL QUESTION]

a) Return on investment
b) Break-even analysis
c) Risk analysis
d) Feasibility analysis

Answer: (d)

13. Difference between PERT and CPM is [MODEL QUESTION]

a) CPM takes less time than PERT
b) PERT is probabilistic but CPM is not
c) Crashing can be done in CPM but not in PERT
d) All of these

Answer: (b)

14. Network is useful for [MODEL QUESTION]

a) Repetitive projects
b) Open-ended projects only
c) Similar projects
d) Non-repetitive projects

Answer: (d)

15. Resource planning is [MODEL QUESTION]
   a) Analysis the return on investment and discounted cash flow of various resource scenarios
   b) Identifying the resource pool available to the project
   c) Consideration of the effect of project decision on the cost of using the product
   d) Determining what physical resources and what quantities of each should be used to perform project activities

Answer: (a)

16. For a critical activity, what is the relationship between total float, free float and independent float? [MODEL QUESTION]
   a) Total float > Free float > Independent float
   b) Total float ≥ Free float ≥ Independent float
   c) Total float = Free float = Independent float
   d) Total float < Free float < Independent float

Answer: (b)

17. Which one of the following is in the correct sequence of project family tree? [MODEL QUESTION]
   a) Plan > Programme > Project > Work Package > Task > Activity
   b) Plan > Project > Programme > Work Package > Task > Activity
   c) Project > Plan > Programme > Work Package > Task > Activity

Answer: (c)

18. Commissioning of a project [MODEL QUESTION]
   a) Precedes installation of the project
   b) Succeeds installation of the project
   c) Has no temporal relationship with installation of the project
   d) The relationship depends on the specific situation

Answer: (d)

19. Project cost reduction can be achieved through [MODEL QUESTION]
   a) Value Engineering
   b) Line-of-balance
   c) Feasibility study
   d) All of these

Answer: (a)

20. Which of the following gives the independent float of an activity? [MODEL QUESTION]
   a) Free float-Head slack
   b) Total float-Tail slack
   c) Free float-Head slack-Tail slack
   d) Total float-Head slack-Tail slack

Answer: (a)

21. A dummy activity in a project network diagram represents [MODEL QUESTION]
   a) logical relationship
   b) necessary time delay
   c) allocation of resources
   d) crashing of an activity

Answer: (a)

22. CPM stands for [MODEL QUESTION]
   a) Critical Project Monitoring
   b) Critical Path Method
   c) Casual Process Monitoring
   d) Capacity Performance Measures

Answer: (b)

23. "Resource Levelling" is synonymous with [MODEL QUESTION]
   a) Resource smoothing
   b) Limited resource allocation
   c) Levelling the quality of resources of a similar project
   d) None of these

Answer: (a)

24. In network analysis an activity that needs no resource or time is called [MODEL QUESTION]
   a) Preceding activity
   b) Subsequent activity
   c) Dummy activity
   d) Dangling activity

Answer: (c)

25. The first stage of the project development cycle is [MODEL QUESTION]
   a) Operation phase
   b) Investment phase
   c) Audit phase
   d) Pre-investment phase

Answer: (d)

26. A project presupposes commitment to tasks to performed with well defined [MODEL QUESTION]
   a) objectives
   b) schedules
   c) budget
   d) all of these

Answer: (d)

27. Which of the following statements is NOT true? [MODEL QUESTION]
   a) A network is a set nodes and arcs
   b) A project is represented as a directed network
   c) The length of the arrow represents the duration of the project activity
   d) A road network is a non-directed network

Answer: (a)

28. What is the basic objective of a work breakdown structure (WBC)? [MODEL QUESTION]

a) Identifying project personnel required
b) Identifying project resources
c) Identifying project activities
d) Identifying project activity interrelations

Answer: (d)

29. Which of the following statements concerning a Gantt chart is true? [MODEL QUESTION]

a) Gantt charts are particularly helpful for scheduling and planning large projects
b) Gantt charts are particularly helpful for scheduling and planning projects with complex precedence relationships
c) The Gantt chart indicates where extra time is available and activities can be delayed
d) The Gantt chart has been a popular project scheduling tool, but is not widely used now

Answer: (c)

30. The second step in the Project Control Process is [MODEL QUESTION]

a) Screening ideas
b) Measuring Progress & performance
c) Setting baseline plan
d) None of these

Answer: (b)

31. An Organisational Breakdown Structure (OBS) is used to identify [MODEL QUESTION]

a) The reporting structure and current availability of all individuals in the project
b) Technical ability and line of communication for all individuals in the project
c) Lines of communication and responsibility for all the individual managers in the project
d) The reporting structure and lines of communication for all individuals in the project

Answer: (a)

Short Answer Type Questions

1. Define a project. What are three major characteristics, which help differentiate projects from other functions carried out in the daily operations of the organization? [MODEL QUESTION]

Answer:

A project is a means to achieve an end in harmony with the development process of the sponsoring organization. It is also usually a means to develop assets, acceptable within quality specifications, required to be used later on by the organization. It is a process where the resources are invested. There are basically six types of resources, which are referred to as 6 M's. These are Men, Materials, Machines, Money, Minutes (Time) and Methods. It is easy to see that two of these six M's, namely Minutes and Money are fairly independent of one another. Other four M's could be procured in exchange for Money but it is difficult to evaluate Minutes in monetary terms. As a result, one must exercise utmost caution in selecting and executing a project since resources are scarce commodities.

An organization usually faces a number of problems, which are inter-related with one another. As such, an organization may be looked upon as a system of problems. In order to handle this system, one is required invariably to follow a planning process. The relevance of a project, thus, must be justified as a part of the planning process of the organization.

2. Define Project planning. **[MODEL QUESTION]**

Answer:

- **Project Planning** deals with specified tasks, operations or activities which must be performed to achieve the project goals. Any project that an entrepreneur may consider has an objective, or a set of objectives to achieve. It has to be operated within a given set of rules, regulations, constraints and restrictions.
- Implementation of project needs resources or inputs. Every project converts the given **inputs** into **outputs** through a process of implementation. The inputs, in the short run, lead to outcomes, which in the long run, should result in impact.
- Each project has a feedback mechanism. A project, therefore, can be defined as a complex of non-routine activities that must be completed with a set amount of resources and within a set time limit
- **Project Management**, therefore, deals with planning scheduling, controlling and monitoring the complex non-routine activities that must be completed to reach the predetermined objectives of the project.

3. What are the essential features of a project contract? Discuss in brief.

Answer: **[MODEL QUESTION]**

The terms of a project contract should be precise and definite. The project authorities, in consultation with legal experts and financial experts should develop standard terms and special conditions of contract; such legally approved contract document should have financial concurrence. This document should form an integral part of all contract and particularly the following:

- Tender documents inviting offers
- Contractors bid proposals
- Classification letters
- Material literature
- Minutes of discussions
- Letter of Intent (LOI) issued by the Project Authority
- Acceptance by the bidder
- Contract Agreement
- Agreed technical / commercial specifications
- Variations
- Special conditions

The principle of project contract includes preparation of a Bid Evaluation Criteria (BEC) for selecting the most competitive contractor in a transparent manner for benefit of the Project Authorities. The BEC generally includes the following in particular:

- Qualifications of bidders
- Technical specifications
- Negotiation
- Spare parts management
- Delivery schedule
- Price schedule
- Price variation
- Terms of payment
- Force Majeure
- Liquidated damage
- Royalties and Patent Rights
- Transportation
- Insurance
- Warranty
- Contractor's Plants and Machineries
- Dispute settlement machineries
- Jurisdiction

4. What factors need to be considered while procuring a project? Discuss.

[MODEL QUESTION]

Answer:

For introduction of a scientific Project buying system for uninterrupted continuance of Project work at least cost, the following principles are required to be maintained.

The Project purchase necessarily needs following pre-requisites:

- Un-interrupted continuance of Project work
- Technically accepted Lowest price for purchased materials
- Nil rejection

Project purchase consists of the followings:

- Purchase of Tailor made items which are fabricated to customers design and may include large number of bought out items which are sub-assemblies /component of the main assembly
- Purchase of readymade items
- Purchase of hardware, paints etc
- Purchase of civil Engineering items
- Purchase of consumables
- Arranging of transportation of materials at Project site.

5. Identify the components of legal aspects of a Project Contract.

[MODEL QUESTION]

Answer:

The project contract should be a legally valid document and should consider in particular the following issues.

Legal Aspect of Contract

- Jurisdiction of court (Calcutta High Court, Supreme Court, etc)
- Penalty vs. liquidated damage
- Performances vs. contract price adjustment
- Indian contract Act: 1872
- Income tax Act
- Sales tax Act
- Sale of Goods Act
- Octroi duties / Excise duties
- Works contract vs. supply contract
- Labour legislations
- Arbitration
- Indian customs Act
- Force majeure conditions

The agreed project contract should contain clauses on each of the above item. This will permit free flow of project execution work.

6. Enumerate the pre-requisites of project purchase. **[MODEL QUESTION]**

Answer:

The Project purchase necessarily needs following pre-requisites:

- Un-interrupted continuance of Project work
- Technically accepted Lowest price for purchased materials
- Nil rejection

Project purchase consists of the followings:

- Purchase of Tailor made items which are fabricated to customers design and may include large number of bought out items which are sub-assemblies/component of the main assembly
- Purchase of readymade items
- Purchase of hardware, paints etc
- Purchase of civil Engineering items
- Purchase of consumables
- Arranging of transportation of materials at Project site.

7. What are the major responsibilities of project stores? [MODEL QUESTION]

Answer:

- To hire the right candidates for the store but also train them for their overall development.
- To ensure that all the employees (floor manager, department manager, cashier and so on) contribute to their level best for the effective functioning of the store. The Store Manager must act as a strong pillar of support and stand by his team at the hour of crisis. It is his duty to acquaint his team members with the latest trends in fashion or any other newly launched retail software. It is his responsibility to delegate responsibilities to his subordinates according to their specializations and extract the best out of them. The store manager must motivate his team members from time to time.
- To ensure that the store is meeting the targets and earning profits. He is responsible for the smooth and effective functioning of the store.
- To display the merchandise so that it immediately catches the attention of the customers. The store manager must ensure that his store meets the expectations of the customers and lives up to its predefined brand image.

The responsibility of the project store is to ensure the follows:

i. The store is kept clean.
ii. Shelves and racks are properly stocked and products do not fall off the shelves.
iii. Mannequins are kept at the right place to attract the customers into the store and rotated frequently.
iv. The merchandise should be according to the season as well as the latest trends.
v. The store is well fit, ventilated and offers a positive ambience to the customers.
vi. The signage displaying the name and logo of the store is installed at the right place and viewable to all.

- One of the major responsibilities of the store manager is to make the customers feel safe and comfortable in the store. It is his key responsibility to make sure that the customer leaves the store with a pleasant smile.

8. Identify the essential elements of a Turnkey Contract and explain in brief. **[MODEL QUESTION]**

Answer:

In this type of contract, the execution of a project is entrusted from the stage of blue print to ultimate commissioning. The owner comes in to turn the key to commence operation of the plant. The contractor takes charge of the total execution of the project.

This type of contract is given when the promoter of the project is not conversant with the technical know-how of the project. On the other hand, the contractor is having full technical know-how and he is well experienced with such technology and the project. Subsequently, the contractor of a turnkey project will be required to give a performance guarantee about total operation of the project.

Sometime, an identifiable part of a project can be awarded to a contractor on turnkey basis. In such cases, the performance of such identifiable part shall be worked out separately without linking it with total performance of the project.

Turnkey contract normally does not require continuous monitoring by the promoter. The promoter, in case of turnkey contract, plays the role of a facilitator and he has to give the contracted resources in schedule.

Long Answer Type Questions

1. Develop the 4 phases of the Project Management life cycle. **[MODEL QUESTION]**

Answer:

The project management life cycle is usually broken into four phases –

i) Initiation
ii) Planning
iii) Execution, and
iv) Closure / termination

i) Initiation stage: In the initiation stage, the initiator of the project is to identify a business need. During this phase, the initiator is to figure out the objective for the project and identify the deliverables for the project.

Here, the project manager is to go for:

a) Feasibility study
b) Identifying scopes – the depth and breadth of the project
c) Identify deliverables
d) Develop a business case, etc.

ii) Planning stage: After the initiation stages are over, the project manager is to move for the planning stage phase.

Here, the project manager is to

a) Break down the larger project into smaller tasks,
b) Build a project team,
c) Prepare a schedule for completion of the assignments.

iii) Execution stage: The execution stage is the stage for turning the project plan into action. Here the project manager is to

a) Keep work on track,
b) Organize the team members
c) Manage time schedule, and
d) Make sure that the project work is done in accordance with the plan.

iv) Closure / termination phase: Once the project is completed, the project manager is to enter into the closure phase.

In this phase, project manager is to –

a) Provide final deliverables
b) Release the project resources and
c) Determine the success of the project.

Here, the project manager is to

a) Analyze the project performance
b) Analyze the project team performance
c) Documenting project closure
d) Conduct post implementation reviews.
e) Accounting in detail for used and unused budget.

2. Discuss the problems and challenges of project management.

[MODEL QUESTION]

Answer:

The problems and challenges of project management are stated as under

1. Poorly defined goals: The first challenge a project manager faces usually regard to corporate and internal issues. If the goals and objectives of a project are not defined clearly, the project may not yield positive result or outcome.

2. Lack of skills on the part of the project team members: Sometimes, it is found that the team members cannot perform and complete the assigned project task because of the lack of skill on their part and as a result, the project is at risk of failure.

3. Poor communication: Poor communication on both sides, the project manager and the team members can serve as a big problem for the accomplishment of the project. The project manager needs to give clear directions to the team members and obtain feedback from the team members – as a two way traffic.

4. **Risks associated with the project:**

- Projects do not go as planned, so risk management is one of the major project management issues.
- Risks can be an uncertainty in the financial market, hidden flaws in the project plan or unknown factors that can impact the success of a project.

5. **Lack of accountability:** The project manager has to make sure that the project-team is accountable throughout their daily workloads.

6. **Unrealistic deadlines:** Most of the projects eventually slip due to the unrealistic initial deadlines. A matter of big concern that, most teams and project managers struggle is unrealistic to project deadlines and expectations from the clients and stakeholders.

3. Differentiate amongst Turnkey contract, Piecework contract, Cost plus percentage contract, lump sum contract and Labour contract. [MODEL QUESTION]

Answer:

Piecework contract

Small work like site-clearance, maintenance and repair work, earthwork excavation, in this case the contractor agrees to work on specific role irrespective of quantity of work.

Lumpsum contract

In this case the contractor assess the job content at site and/or from the actual drawing and undertakes the work at a lumpsam price for completion within a time at an agreed terms of payment.

Cost plus percentage contract

Under this method the contractors carry out the work with materials and labour mentioned in the contract and after it was duly approved by the promoter. The contractor keeps a transparent Account of all cost being incurred for audit by the promoters. Payments are made from time to time depending upon actual assessment of work done at site and the final payment is made at last when the project is being completed.

Such type of contract is normally used when the promoter is a Govt. department and contractor is a PSU and where there is a technical uncertainty, which may call for change in technical specification and/or quantity of job.

Labour contract

In this case the promoter supplies free of cost all materials and consumables and the contractor either supplies labour on an agreed per day rate and/or the contractor raises his bill for labour contract of the job on an agreed rate of each item of work. This requires maintenance of measurement book. The payment against such contract including statutory payment has to be strictly followed to avoid possible Govt. intervention.

Answer:
Risks are of two types – speculative or commercial risks such as change of technology, political upheaval etc; and pure or extraneous risks such as damage caused due to fire, or earthquake, or human risks such as burglary, theft, negligence, etc. Only the later risks are insurable. The object of insurance is to safeguard the business from a risk, which may affect its solvency.

- ✔ Fire and Natural calamities Insurance
- ✔ Erection All Risks (EAR) Insurance
- ✔ Marine – cum – Erection (MCE) Policy
- ✔ Contractors All Risk (CAR) Policy
- ✔ Contractors Plant and Machinery Policy
- ✔ Machinery Breakdown Policy
- ✔ Boiler Explosion Insurance
- ✔ Electronic Equipment Insurance

6. 'High value tender should be in three parts.' Elucidate. **[MODEL QUESTION]**

Answer:
The DGS&D under the Ministry of supplies, GOI is also having a model field-tested contract format. These documents form the basis for compilation of project contract in India. The contract consists of three part

- Technical part
- Commercial part
- Price part

Technical Part: The technical part of the contract contains details of the project, plants, machineries and technology involved, the relevant standard to be followed (IS/BS/DIN etc). This should include detail design and drawings. The performance criteria necessary at suppliers' works vis-à-vis at site are required to be mentioned. The tests required for acceptance of the plant will be essential. The scope of work, quantity of each work and deliverables like number and type of as made drawings, manufacturers' drawings, list of spare parts, operation and instruction manuals etc. are required to be mentioned in the technical part.

Commercial Part: This part shall include the following in particular:

- Completion schedule right from the stage of commencement to completion
- Validity of the contract
- Terms of delivery: FOB/FOR/CIF etc
- Terms of payment:
- Clause for termination of contract
- Risk purchase clause
- Arbitrations
- Jurisdiction

- Price variation clauses
- Liquidated damage clause
- Force mejeure conditions
- Clause for deviation in contracts
- Security deposit
- Performance guarantee
- Payment of statutory liabilities
- Variation in rate of exchange or statutory levies
- Environmental protection clause
- Payment to sub-contractor and adherence to contract labour abolition & Regulation Act
- Obedience to labour legislations

Price Bid

- ITEMWISE price of supply, erection and commissioning.
- Total price
- Price basis (FOB, CIF, FOR)
- Price for transportation, loading and unloading,
- Insurance costs of all descriptions
- Idle labour changes
- Details of statutory levies considered in the price
- Details of currency, exchange rate and amount considered in the price
- Details of training to operating personnel and cost there of

7. What are Project Intangibles? Enumerate their effect on Project Management.
[MODEL QUESTION]

Answer:

The following project intangibles deserve special note for appropriate project control initiatives:

1. Preliminary and pre-operative expenses

The tendency to underestimate this component of project cost is common. This will move in tandem with the delay in implementation of the project and can accumulate to alarming proportions, as the costs involved are fixed or period costs like salaries, rent, etc., which creep with the progress of time, irrespective of whether physical progress in work is achieved or not. Pre-operative expenses can be as much as 5 to 10 percent of project cost in cases where the project is completed in 2 or 3 years, and further delays witness sharp increases in relation to the total project cost.

2. Interest during construction

The project may start with a debt/equity ratio of 1:1 and then degenerate due to poor anticipation of the pattern of drawl of funds and the related cost implications. In the initial phases of project construction, there is likely to be heavy utilisation of debt, and

issue of share capital is normally resorted to only at the time the project is ready to go on stream. Loans are expensive as interest accumulates with the passage of time even when there is no production or revenue. Sometimes, to make up the cash requirements until share issue, bridging loans are availed of, and these are particularly expensive, with higher interest rates. Assuming the project gets implemented on schedule, the interest component of project cost may go beyond 15 percent, and the incidence will get compounded if there is further delay in the completion of the project. In some of the Indian projects that have overshot the time and cost estimates many times over, the interest cost or financing charges almost equal the original estimate of the total project cost. Project management should watch out for the creeping effect of interest charges.

3. *Share issue and capital raising expenses*

Mortgage expenses, legal fees, stamp duty, etc., for raising loans can be as much as 1 to 2 percent of borrowed amounts. Issuing share capital also is quite an expensive proposition, particularly where the amount of issue is modest. Underwriting, stamp-duty, advertising, publicity etc., may collectively accountants for 5 to 10 percent of total capital raised, depending upon the amount of issue involved.

4. *Working capital margin*

With the focus on long-term finance for the project, the working capital needs for the operating phase are not considered in detail, and broad assumptions have the effect of underestimating the working capital requirements.

8. Write short notes on the following: **[MODEL QUESTION]**

a) Computerised Project Management

b) Crashing

c) Global tender

Answer:

a) The computer revolution has made project management systems affordable to small Projects as well as to sites in far-flung areas. The limitation of small systems no longer lies in technology, but human resistance change. With the invention of microcomputer and its acceptance by the business community, abundant project management software packages are now available for the users at reasonable prices. These professional project management software programmes support the planning and control of such elements as work scope, contents of a project, project timings, human resources, budgeting, costs, and communication.

Advantages

(a) CPMS (computerises Project management system) can analyse problem with very high speed compared to manual analysis. Because of speed, the number of permutations and combinations could be handled easily.

(b) CMPS is essential for large projects of complex nature, which generates large volume and data. Such voluminous data cannot be handled manually.

PROJECT FEASIBILITY STUDIES

Multiple Choice Type Questions

1. Technical/operational feasibility analysis collects data on which of the following parameters? [MODEL QUESTION]
   a) Material availability
   b) Plant capacity
   c) Material requirement planning
   d) All of these

Answer: (d)

2. Project cost reduction can be achieved through the following approach/technique: [MODEL QUESTION]
   a) Value engineering
   b) Line-of-balance
   c) Feasibility study
   d) All of these

Answer: (a)

3. Which of these instruments is used for financial appraisal of a project? [MODEL QUESTION]
   a) Current ratio
   b) Acid-test ratio
   c) DCF
   d) Debtor-period

Answer: (c)

4. A capital investment is one that [MODEL QUESTION]
   a) Has the prospect of long-term benefits
   b) Has the prospect of short-term benefits
   c) Is only undertaken by large corporations
   d) Applies only to investment in fixed assets

Answer: (d)

5. A profitability index of 0.85 for a project means that [MODEL QUESTION]
   a) The present value of benefits is 85% greater than the project's costs
   b) The project's NPV is greater than zero
   c) The project returns 85 cents in present value for each current dollar invested
   d) The payback period is less than one year

Answer: (a)

6. "Cost Plus Profit" type of contract is often made when [MODEL QUESTION]
   a) Estimation of the work cannot be done precisely
   b) Estimation of the work can be done precisely
   c) Maximization of profit is the objective
   d) Minimization of cost is the objective

Answer: (a)

7. In estimating "after-tax incremental operating cash flows" for a project, one should include all of the following except [MODEL QUESTION]
   a) Sunk costs
   b) Opportunity costs
   c) Effects of inflation
   d) None of these

Answer: (d)

8. Why should an entrepreneur do a feasibility study for starting a new venture?
[MODEL QUESTION]

a) To see if there are possible barriers to success
b) To identify possible sources of funds
c) To estimate the expected sales
d) To explore potential customers

Answer: (a)

Short Answer Type Questions

1. Describe the procedure associated with getting "Term Loan" from financial institutions.
[MODEL QUESTION]

Answer:

The FIs have been created to provide long-term finance to projects. The finance may be obtained in the form of equity or debt or both. The lending decision of the FI's depends upon the following: -

- The promoter shall prove that the project has the capacity to repay loan and interest from its own earnings.
- The value of security offered against the loan
- The integrity and willingness of the borrower to repay back the loan.

Covenants Attached to Lending

- Co-lateral security offered by the promoter for the loan
- The project promoter should send periodic report about the project
- The project sponsors should use the fund for the intended specific purposes
- The project sponsors should maintain all the assets in good condition.

The project promoter should furnish a personal guarantee.

2. What do you mean by a Techno-Economic Feasibility Study?
[MODEL QUESTION]

Answer:

- **The feasibility study of a project refers** to the detailed, through and complete analysis of the project.
- A project is evaluated in terms of its feasibility.
- Feasibility of a project is studied from the view points of its (a) **Techno Feasibility** (b) **Economic Feasibility** and (c) **Commercial Feasibility**.

Feasibility in terms of technological feasibility

- **Technological Feasibility** of a project means judging the technical and engineering aspects of a project.
- It indicates the analysis of the implementation of the technical knowledge, techniques and its effectiveness in the project.

- It considers the process of production and the use of technology in the functioning of the project.
- While studying the technical feasibility of a project an overall design of the plant and machinery to be used and how effectively those can be utilised in the project is to be considered carefully.
- While studying the technical feasibility of a project, the location of the project, size of the project, infrastructural facilities of the project are also considered.

Feasibility study in terms of Economic feasibility

→ **Economic Feasibility** study is made to judge the economic viability of the project.

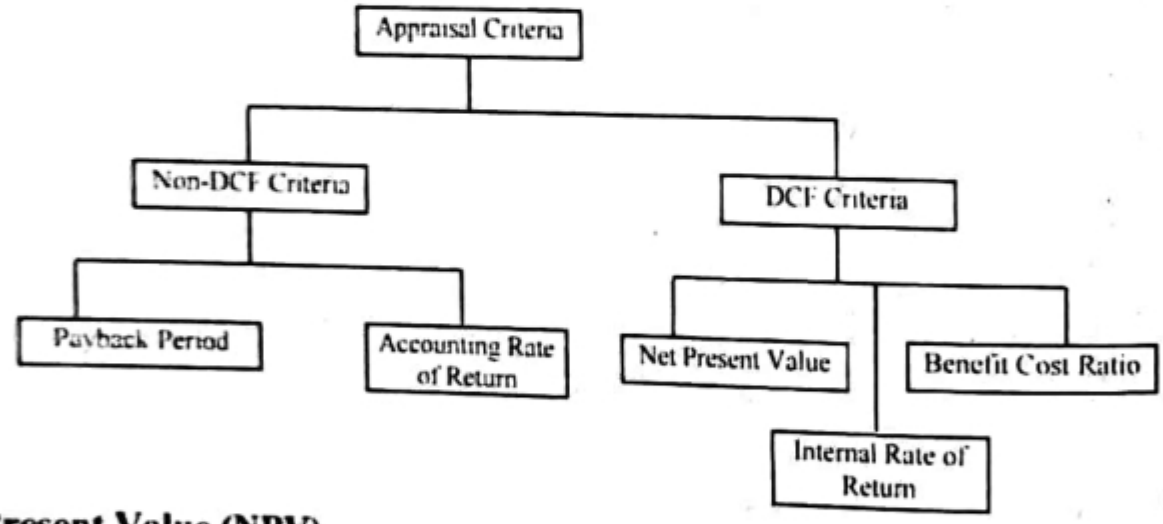
→ Economic feasibility study reveals whether any project is able to meet the burden of serving debt and investors are satisfied with the expected returns.

3. Discuss advantage and disadvantage of DCF criteria for project appraisal.

[MODEL QUESTION]

Answer:

The investment appraisal criteria, is classified into two broad categories–non-discounting criteria and discounting criteria.



Net Present Value (NPV)

Advantages

- It takes into account the time value of money
- It considers the cash flow stream in its entirety
- It squares neatly with the financial objective of maximization of wealth of stockholders.

Disadvantages

- It is expressed as an absolute number, it is not readily intelligible to decision makers who are wanted to think in relative terms (like rate of return or profitability index).

Internal rate of Return (IRR) Method

Advantages

- It takes into account the time value of money
- It considers the cash flow stream in its entirety
- It makes sense to businessmen who are wanted to think in terms of rate of return and find an absolute quantity.

Disadvantages

The internal rate of return may not be uniquely defined. If the cash flow steam of a project has more than one change in sign. there is a possibility that there are multiple rates of return.

The internal rate of return figure cannot distinguish between lending and borrowing and hence a high internal rate of return need not necessarily be a desirable feature.

The internal rate of return criterion can be misleading when choosing between mutually exclusive projects that have substantially different outlays.

Benefit-cost Ratio Method

Advantages

The proponents of benefit cost ratio argue that since this criterion measures net present value per rupee of outlay. it can discriminate between large and small investments and hence is preferable to the net present value criterion.

Disadvantages

i) Under unconstrained conditions, the benefit – cost ratio criteria will accept and reject the same project as the net present value criterion

ii) When the capital budget is limited in the current period, the benefit ratio criterion may rank projects correctly in the order decreasing efficient use of capital

When cash outflows occur beyond the current period, the benefit cost ratio criterion is unsuitable as a selecti8on criterion.

4. Briefly explain the term Detailed Project Report (DPR). [MODEL QUESTION]

Answer:

Detailed project report (DPR) is the further step of Feasibility study report in firming up the proposal. When an investment proposal has been approved on the basis functional report and the proposal is a major proposal, it would be necessary to detailed project report to firm up the proposal for the capital cost as well as the various facilities. It includes...

- Examination of technological parameters.
- Description of the technology to be used.
- Broad technical specification.
- Evaluation of the existing resources.
- Schedule plan.
- General layout.
- Volume of work.

$$\text{Average rate of return} = \frac{\text{(Profit after tax)}}{\text{(Book value of investment)}}$$

Profit after tax is the average annual post tax benefit over the life of the project. Unlike pay back period method, under ARR method, the entire life of the project is taken into account.

Net Present Value (NPV)

This method is one of the discounted cash flow techniques and it recognizes the time value of money.

$$\begin{pmatrix}\text{Net present valaue of}\\ \text{(NPV)of cash flow}\end{pmatrix} = \begin{pmatrix}\text{Present value of all future Cash}\\ \text{inflows over the life of the project}\end{pmatrix} - \begin{pmatrix}\text{Present value of}\\ \text{Cash out flow}\end{pmatrix}$$

The present value of future cash inflows is arrived at by discounting the future cash inflows at an interest rate equal to the cost of capital.

Internal rate of Return (IRR) Method

The internal rate of return of a project is the discount rate that makes the net present value equal to zero. In other words, the internal rate of return is that rate of discount, which would equate the present value of cash out flows (investments on the project), to the present value of cash inflows (benefits over the life of the project)

Benefit-cost Ratio Method

This is only another version of Net Present Value method. Under this method, the benefits from the project (.e. cash inflows) are reduced to their present value at a specified rate of discount (cost of capital) and this figure is divided by the present value of the cost of the project (i.e. cash out flows).

$$\text{Benefit-Cost Ratio(BCR)} = \frac{\text{Present Value of Cash in-flows}}{\text{Present Value of Cash out-flows}}$$

2. a) I propose to make an initial investment of Rs. 12,000,000 for a particular project *A*. After 4 years, I expect to have an inflow of Rs. 7,500,000 every year for 3 years. There is another alternative proposal *B* for investment. The same initial investment will fetch me Rs. 22,000,000 at the end of 6 years. Assuming a discounting factor of 10%, use the NPV method to decide which proposal is better.

b) What are usually the contents of a feasibility study report of a project?

[MODEL QUESTION]

Answer:

a)

Cash flow statement of 'A'

Year	Inflow	Outflow
1.	–	12,000,000
2.	–	–
3.	–	–
4.	–	–
5.	7,500,000	–
6.	7,500,000	–
7.	7,500,000	–

Cash flow statement of 'B'

year	Inflow	Outflow
1.	–	12,000,000
2.	–	–
3.	–	–
4.	–	–
5.	–	–
6.	–	–
7.	22,000,000	–

NVP = present value of future cash inflow – present value of cash outflow

$$NPV = \left[\frac{I}{(1+r)^2} + \frac{I}{(1+r)^3} + \cdots + \frac{I}{(1+r)^n}\right] - I_0$$

$$= I\left[\frac{1}{(1+r)^2} + \frac{1}{(1+r)^3} + \cdots + \frac{1}{(1+r)^n}\right] - I_0$$

In case of project 'A'

$$NPV = 7,500,000\left[\frac{1}{(1.1)^5} + \frac{1}{(1.1)^6} + \frac{1}{(1.1)^7}\right] - I_0$$

[$\because r = 0.1$ (Rate of discount)]

$$= \left[7,50,000(0.6209 + 0.5645 + 0.5132)\right] - I_0$$

$$= 7,500,000 \times 1.6986 - 12,000,000$$

$$= 12,739,500 - 12,000,000$$

$$= \text{Rs. } 7,39,500/-$$

In case of project 'B'

$$NPV = 22,000,000 \times \frac{1}{(1.1)^7} - I_0$$

$$= 22,000,000 \times 0.5132 - 12,000,000$$

$$= 11,290,400 - 12,000,000$$

$$= (-)7,09,600/-$$

Hence project 'A' is better proposal since its NPV is positive (Rs. 7,39,500/-). NPV of project 'B' is negative.

b) Project Feasibility Studies constitute the followings

The first step towards this is projects identification and formulation. This depends upon the business environment in the country. The following issues in particular will enable an investor to identify the project:

1. **Governments' Role:** In planned protected economy the Government was promoter and regulator of industry and trade. In open market economy, the demand for a product depends upon Government policy. Today the thrust areas of the Government of India (GOI) are as follows:
   Electronics, Leather, Automobile Industry, Drugs & Pharmaceuticals, Non-Conventional Energy Sources, Pollution Control Equipment, Food Processing, Sports Goods, Health Care, Cost effective building materials etc. On the other hand because of sudden demand of steel and continuous upward prices of steel in the world market, demands for steel have come up.
2. Fiscal Policy of the GOI.
3. Monetary policy that influences money supply, credit policy, inflation and cost of money.
4. Other regulatory measures of GOI like industrial licensing policy, control over capital issues, MRTP, FERA, control over prices etc.

After analysis of the above constituting business environment, the second step is identification of the project. This requires analysis of the followings:

1. Performance of existing industries. Present market (home market & export market), profitability, break-even volume of product, price trend, demand pattern, availability of technology etc.
2. **Availability of raw materials:** Availability of raw materials from within the country or from abroad. Present price trend and demand pattern.
3. Availability of skilled labour.
4. Import/Export statistics
5. Price trend.
6. Primary and secondary data.
7. Research Laboratories.
8. Consumption abroad.
9. Identification of unfulfilled psychological needs.
10. Plan outlay and Government guidelines.
11. Analysis of social & economic trends.
12. Feasibility of rehabilitation of sick units.

Project Preparation

After identification of a project that prima-facie appears to be worthwhile, the promoter would need further analysis as below:

a) Pre-feasibility study
b) Functional study
c) Feasibility study
d) Preparation of detailed project report (DPR)

b) The likely sales estimates should be well above the capacity of plant proposed.
c) If the proposed product has got competitors, then the competitive edge that can be gained in terms of quality, price and consumer acceptability etc. are to be studied.

Financial Feasibility

a) Source of finance and its availability
b) Cost of debt fund.
c) Cost of procuring of capital
d) Cost of servicing debts and equity
e) Anticipated profits.

Detailed Project Report (DPR)

This will contain the detail information as below:

1. General information about the project
2. Back round & experience of the project promoters
3. Details and working results of industrial concerns already owned/promoted by the owners
4. Details of the proposed project
   - Plant capacity
   - Manufacturing process
   - Technical know how/tie up
   - Management team for the project
   - Details of land, buildings, plants and machines
   - Details of infrastructural facilities like power, water, transport etc.
   - Raw materials requirement/availability
   - Effluent treatment & discharge arrangement
   - Labour requirement/availability
5. Schedule of implementation of the project
6. Project cost
7. Means of financing the project
8. Working capital requirement/arrangement made
9. Marketing and selling arrangements
10. Profitability and cast flow estimates
11. Mode of repayment of term loan
12. Govt. approval, local bodies consent and statutory approvals
13. Details of co-lateral securities that can be offered to banks/FIs

Tax Incentives and Project Investment Decision

1. Incentives from fiscal policy
   - Depreciation
   - Tax holiday
   - Investment Allowance

- Amortization of preliminary expenses

2. Incentives from Monitory Policy
   - Interest rate concession
   - Repayment moratorium
   - Participation in Risk Capital
   - Reduced security margin
   - Refinancing facilities
3. Incentives from commercial policy
   - Octoi exemption
   - Subsidized rate for electric power
   - Capital investment subsidy
   - Sales tax incentives for new industry.

3. You are the financial manager of Hindustan Extrusion Products Limited (HEPL). HEPL is planning to set up an extrusion plant at Indore. Your project staff has developed the following cash flow forecast for the extrusion plant project.

- **Cash flow Forecast for HEPL's Extrusion Plant**

	Year 0	(Rs. In millions) Years 1-10
Investment	(250)	
Sales		200
Variable costs (60% of sales)		120
Fixed costs		20
Depreciation		25
Pre-tax profit		35
Taxes		10
Profit after Taxes		25
Cash flow from operations		50
Net Cash flow		50

- **The firm uses a 13% discount rate for this type of investment.**
- **What is the NPV of the project?**

[MODEL QUESTION]

Answer:

Calculations for arriving at the NPV of the project, after using 13% discount rate for the above type of investment are as follows:

1. $\frac{1}{1.13} = 0.8849$
2. $\frac{0.8849}{1.13} = 0.7831$
3. $\frac{0.7831}{1.13} = 0.6930$
4. $\frac{0.6930}{1.13} = 0.6132$

5. $\frac{0.6132}{1.13} = 0.5426$

NCF × $PV_{(13\ 10)}$ = PV of CF

Therefore, NPV = PV of CFAT – PV of cash outflow

= 50×PV/$FA_{(13\ 10)}$ – PV of cash outflow

= 50 × 5.426 – 250 (Investment)

= 271.3 – 250 = 21.3

4. A company has an investment opportunity costing Rs. 40,000. The following expected Net Cash Flow (after tax before depreciation) is as follows.

Year	1	2	3	4	5	6	7	8	9	10
CF	7000	7000	7000	7000	7000	8000	10000	15000	10000	4000

Assuming 10% as cost of capital: determine:

i) Payback period

ii) NPV at 10%

iii) Profitability Index at 10% discounting factor

iv) IRR by 10% and 15% **[MODEL QUESTION]**

Answer:

Statement to calculate Pay Bank Period, NPV etc.

Rank	NCF	D.F 10%	DCF 10%	D.F 15%	DCF 15%
	(40,000)	1.00	(40,000)	1.00	(40,000)
1	7,000	0.91	6,370	0.87	6,090
2	7,000	0.83	5,810	0.76	5,320
3	7,000	0.75	5,250	0.65	4,550
4	7,000	0.68	4,760	0.57	3,990
5	7,000	0.62	4,340	0.50	3,500
6	8,000	0.56	4,480	0.43	3,446
7	10,000	0.51	5,100	0.37	3,700
8	15,000	0.47	7,050	0.33	4,950
9	10,000	0.42	4,200	0.28	2,800
10	4000	0.38	1,520	0.25	1,000
	82,000		48,610		39,346
NPV			8,610		(654)

$$PCB\ (CF) = \frac{\text{Net Investment}}{\text{NCF per year}} = \frac{40,000}{8,200} = 4.87 \text{ years} = 5 \text{ years.}$$

$$= \frac{40,000}{4,861} = 8.22 \text{ years. (At discounting)}$$

$$P.I = \frac{\text{PV at NCF}}{\text{Initial outlay}} = \frac{48,610}{40,000} = 1.21, 1.22$$

	X	Y
Selling Price/ unit	40	50
Less: Variable cost / unit	16	10
Contribution / unit	24	40

Weighted Average contribution / unit

$$=[RS24\times 70\%]+[40\times 30\%]=16.80+12=28.80$$

Overall Breakeven point (unit)

$$=\frac{F.C}{\text{Contribution/unit}}=\frac{666600}{28.80}=23144(\text{unit})$$

i) B – E Point $(X)=23144\times\frac{70}{100}=16200$

ii) B – E Point $(Y)=23144\times\frac{30}{100}=6944$

(i) + (ii) = 23144 (unit).

B – E Point (amt) $X=16200\times 40=648000$

B – E Point (amt) $Y=6944\times 50=347200$

7. "An important aspect of measuring the profitability of an organization is ROI." Explain. **[MODEL QUESTION]**

Answer:

ROI (Return on Investment)

- The return on investment (R.O.I) devise is one of the most useful tools and techniques of control for evaluating the relative as also the absolute success of an organization or any of its particular branch or division.
- Through this technique, the ratio of earnings of an organization to investment on capital may be determined.
- The return on investment implies as percentage of profit earned on capital employed.
- Return on investment acts as a yardstick to know how much an organization or any of its division or unit earns profit on the basis of the capital employed.
- Management may consider that profit before interest and tax expressed as a percentage of total assets is a useful measure of performance.
- ROI refers to a performance measure used to evaluate the **efficiency** of an investment or to compare the efficiency of a number of different investments.
- ROI measures the amount of **returns** on an investment relative to the **investment's cost.**
- To calculate ROI, the benefit (or return) of an investment is divided by the cost of the investment and the result is expressed as a percentage or a ratio.

  The return on investment formula

$$ROI=\frac{(\text{Gain for investment}-\text{Cost of investment})}{\text{Cost of investment}}$$

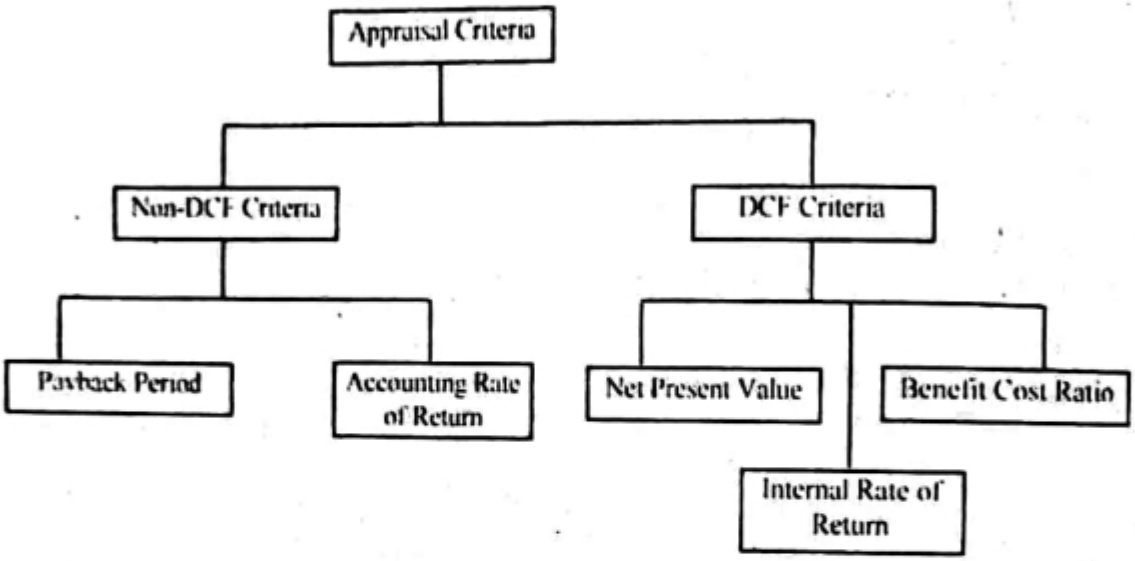
- Because ROI is measured as a percentage, it can be easily compared with returns from other investments, allowing one to measure a variety of types of investments against one another.
- Thus, it is true that ROI is an important aspect of measuring the probability of an organisation.

8. State the Different methods of Project Appraisal. **[MODEL QUESTION]**

Answer:

Project Appraisal Criteria

The investment appraisal criteria, is classified into two broad categories–non-discounting criteria and discounting criteria.



Payback Period Method

This is one of the widely recognized and simple methods of evaluating investment proposals. Payback period is defined, as the length of the time required to recover the original investment on the project, through cash flow earned. The cash inflow includes operating profit, less income tax payable, plus depreciation.

Average Rate of Return (ARR) Method (or Accounting Rate of Return Method)

The average rate of return is also called the accounting rate of return.

$$\text{Average rate of return} = \frac{\text{(Profit after tax)}}{\text{(Book value of investment)}}$$

Profit after tax is the average annual post tax benefit over the life of the project. Unlike payback period method, under ARR method, the entire life of the project is taken into account.

Net Present Value (NPV)

This method is one of the discounted cash flow techniques and it recognizes the time value of money.

$$\begin{pmatrix}\text{Net present valaue of}\\ \text{(NPV) of cash flow}\end{pmatrix}$$

$$=\begin{pmatrix}\text{Present value of all future Cash}\\ \text{inflows over the life of the project}\end{pmatrix}-\begin{pmatrix}\text{Present value of}\\ \text{Cash out flow}\end{pmatrix}$$

The present value of future cash inflows is arrived at by discounting the future cash inflows at an interest rate equal to the cost of capital.

Symbolically it can be expressed as

$$NPV=\begin{bmatrix}CF_1/(1+r)^1+CF_2/(1+r)^2\\ +CF_3/(1+r)^3+.....+CF_n/(1+r)^n\end{bmatrix}-CF_n$$

where, CF_1, CF_2... are future cash inflows occurring at the end of the first year, second year .....etc; n = life of the project in years. r = discount rate (cost capital); and CF_0 = Present cash out flow.

If, NPV = 0, it indicates that the present cash outflow and the present value of future cash inflows are equal.

If, NPV < 0, it indicates that the present value of future cash inflows is less than the present cash outflow.

If NPV > 0, it indicates that the present value of future cash inflows is more than the present cash outflow.

Internal rate of Return (IRR) Method

The internal rate of return of a project is the discount rate that makes the net present value equal to zero. In other words, the internal rate of return is that rate of discount, which would equate the present value of cash out flows (investments on the project), to the present value of cash inflows (benefits over the life of the project)

In the calculation of net present value of a project, the discount rate (cost of capital) is assumed and the net present value is calculated by discounting future cash inflows at the assumed discount rate. In the calculation of internal rate of return from a project, the net present value is set equal to zero and the corresponding discount rate is determined, the discount rate at which the net present value is zero is the internal rate of return.

$$0=\begin{bmatrix}CF_1/(1+r)+CF_2/(1+r)^1+CF_3/(1+r)^2\\ +CF_3/(1+r)^3+...+CF_n/(1+r)^n\end{bmatrix}-CF_0$$

$$=\sum_{t=0}^{n}CF_t/(1+r)^t$$

where, CF_t = cash flow at the end of year t, r = discount rate, and n = life of the project.

Comparison between NPV Method and IRR Method

Both NPV method and IRR Method appear to be the same structurally. Prima facie, it appears that if two projects were compared using NPV method and IRR method, both the methods would rank the projects in the same order. Though in most cases the decision

based on either of the methods would be similar, there are certain instances wherein ranking by the two methods may differ from each other. Though it sounds not logical, the following illustration will clear the apprehensions.

Benefit – cost Ratio Method

This is only another version of Net Present Value method. Under this method, the benefits from the project (.e. cash inflows) are reduced to their present value at a specified rate of discount (cost of capital) and this figure is divided by the present value of the cost of the project (i.e. cash out flows).

$$\text{Benefit - Cost Ratio(BCR)} = \frac{\text{Present Value of Cash in - lows}}{\text{Present Value of Cash out-flows}}$$

or. Benefit – Cost Ratio (BCR) = PVB/I

Where, PVB = present value of benefits, and I = initial investment

Net benefit – cost ratio (NBCR) – (PVB – I) / I = BCR – I

When BCR	or NBCR	Rule is
>1	> 0	Accept
=1	= 0	Indifferent
<1	< 0	Reject

PROJECT PLANNING

Multiple Choice Type Questions

1. A dummy activity in a project network diagram represents [MODEL QUESTION]
   a) logical relationship
   b) necessary time delay
   c) allocation of resources
   d) crashing of an activity

Answer: (a)

2. CPM stands for [MODEL QUESTION]
   a) Critical Project Monitoring
   b) Critical Path Method
   c) Casual Process Monitoring
   d) Capacity Performance Measures

Answer: (b)

3. For a critical activity, what is the relationship between total float, free float and independent float? [MODEL QUESTION]
   a) Total float > Free float > Independent float
   b) Total float ≥ Free float ≥ Independent float
   c) Total float = Free float = Independent float
   d) Total float < Free float < Independent float

Answer: (b)

4. DPR stands for [MODEL QUESTION]
   a) Detailed Planning Report
   b) Decent Project Report
   c) Deal for Project Report
   d) Detailed Project Report

Answer: (d)

5. Which of the following statements concerning a Gantt chart is true? [MODEL QUESTION]
   a) Gantt charts are particularly helpful for scheduling and planning large projects
   b) Gantt charts are particularly helpful for scheduling and planning projects with complex precedence relationships
   c) The Gantt chart indicates where extra time is available and activities can be delayed
   d) The Gantt chart has been a popular project scheduling tool, but is not widely used now

Answer: (c)

6. The second step in the Project Control Process is [MODEL QUESTION]
   a) Screening ideas
   b) Measuring Progress & performance
   c) Setting baseline plan
   d) None of these

Answer: (b)

Short Answer Type Questions

1. Define Project planning. **[MODEL QUESTION]**

Answer:

- **Project Planning** deals with specified tasks, operations or activities which must be performed to achieve the project goals. Any project that an entrepreneur may consider has an objective, or a set of objectives to achieve. It has to be operated within a given set of rules, regulations, constraints and restrictions.
- Implementation of project needs resources or inputs. Every project converts the given **inputs** into **outputs** through a process of implementation. The inputs, in the short run, lead to outcomes, which in the long run, should result in impact.
- Each project has a feedback mechanism. A project, therefore, can be defined as a complex of non-routine activities that must be completed with a set amount of resources and within a set time limit
- **Project Management**, therefore, deals with planning scheduling, controlling and monitoring the complex non-routine activities that must be completed to reach the predetermined objectives of the project.

2. What do you mean by a Techno-Economic Feasibility Study? **[MODEL QUESTION]**

Answer:

- **The feasibility study of a project refers** to the detailed, through and complete analysis of the project.
- A project is evaluated in terms of its feasibility.
- Feasibility of a project is studied from the view points of its (a) **Techno Feasibility** (b) **Economic Feasibility** and (c) **Commercial Feasibility**.

Feasibility in terms of technological feasibility

- **Technological Feasibility** of a project means judging the technical and engineering aspects of a project.
- It indicates the analysis of the implementation of the technical knowledge, techniques and its effectiveness in the project.
- It considers the process of production and the use of technology in the functioning of the project.
- While studying the technical feasibility of a project an overall design of the plant and machinery to be used and how effectively those can be utilised in the project is to be considered carefully.
- While studying the technical feasibility of a project, the location of the project, size of the project, infrastructural facilities of the project are also considered.

Feasibility study in terms of Economic feasibility

→ **Economic Feasibility** study is made to judge the economic viability of the project.

→ Economic feasibility study reveals whether any project is able to meet the burden of serving debt and investors are satisfied with the expected returns.

3. Enumerate the importance of Work Break-down Structure (WBS) and Organization Break-down Structure (OBS) in Project Management.

[MODEL QUESTION]

Answer:

Work Breakdown Structure is a process by which the whole project is divided (i.e. broken down) into various sub-projects, the sub-projects into various tasks, the tasks into various sub-tasks and finally the sub-tasks into work-packages. In the process of building up WBS, the project manager, all connected functional managers and all the connected staff work together and analyse all aspects of the project so that their collective wisdom will prevail. Thus, we have the following stages or levels:

1. Project
2. Sub-project
3. Task
4. Sub-task
5. Work-package

Types of Work Break down Structure:

Work Break down Structure can be of two types, viz.,

- Product oriented WBS
- Functionally oriented WBS

Organization Break down Structure (OBS)

The project organization (i.e. the personnel involved in project implementation and control) can be broken up in to several groups, sub-groups, individuals etc. The breaking down of project organization is done in such a way that an individual or a group of individuals can be identified with the work packages arrived at as per WBS.

The ultimate objective of OBS is to integrate the OBS with the WBS by identifying the organizational groups, sub-groups, individuals who have functional responsibility for each work package of the WBS.

Long Answer Type Questions

1. Consider the following project:

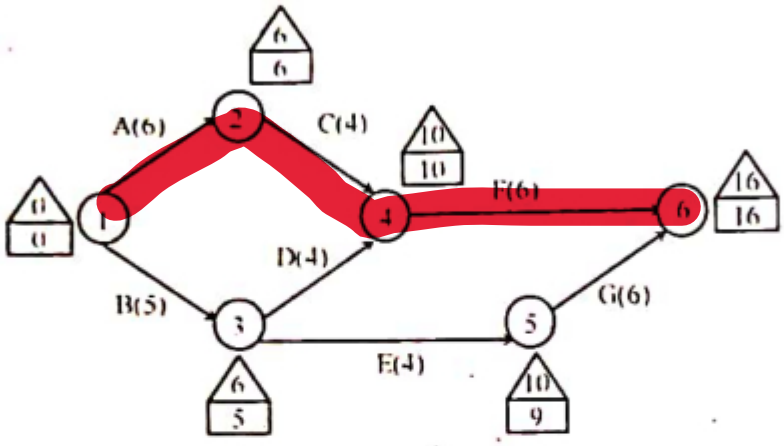
Activity	Time estimates in weeks			Predecessor
	t_0	t_m	t_p	
A	3	6	9	—
B	2	5	8	—
C	2	4	6	A
D	2	3	10	B

E	1	3	11	B
F	4	6	8	C,D
G	1	5	15	E

i) Draw the project network.
ii) Compute the expected time for each activity.
iii) Determine the critical path and expected project duration.
iv) Calculate the variance of critical path.
v) Also find the probability of completing the project by 18 weeks. $(P(Z \le 1.4566) = 0.9265)$. [MODEL QUESTION]

Answer:

i) Now we construct the network with the help of the predecessor relation given in the data.



ii) We calculate the expected time and variance of each acting or in the following table.

Activity	(t_a)	(t_m)	(t_p)	$t_e = \frac{a+4m+b}{6}$	$\sigma_t^2 = \left(\frac{t_p - t_a}{6}\right)^2$
A	3	6	9	6	1
B	2	5	8	5	1
C	2	4	6	4	0.444
D	2	3	10	4	1.777
E	1	3	11	4	2.777
F	4	6	8	6	0.444
G	1	5	15	6	5.444

iii) Critical path is 1–2–4–6 or A–C–F
The project length = 18 weeks

iv) Project length variance, $\sigma^2 = 1 + 0.444 + 0.444 = 1.888$
S.D. $\sigma = 1.374$

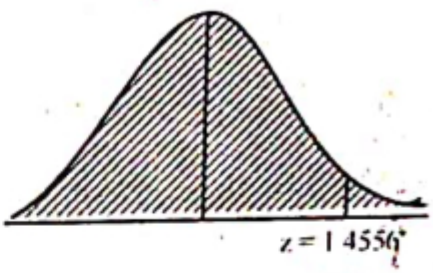
v) The probability of completing the project is 18 weeks is given by, $P(z \le D)$, where

$$D = \frac{T_s - T_e}{\sigma} \qquad [\because T_s = 18, T_e = 16, \sigma = 1.374]$$

$$\therefore D = \frac{18-16}{1.374} = 1.4456$$

$$P(z \le D) = P(z \le 1.4556) = 0.5 + \phi(1.4456)$$

$$= 0.5 + 0.4265 = 0.9265 = 92.65\% \text{ Ans.}$$



PROJECT SCHEDULING AND COSTING

Multiple Choice Type Questions

1. Programme Evaluation and Review Technique (PERT) uses [MODEL QUESTION]
   a) Multiple time estimates
   b) Multiple cost estimates
   c) Resource smoothing
   d) None of these

Answer: (a)

2. Difference between PERT and CPM is [MODEL QUESTION]
   a) CPM takes less time than PERT
   b) PERT is probabilistic but CPM is not
   c) Crashing can be done in CPM but not in PERT
   d) All of these

Answer: (b)

3. Network is useful for [MODEL QUESTION]
   a) Repetitive projects
   b) Open-ended projects only
   c) Similar projects
   d) Non-repetitive projects

Answer: (d)

4. Resource planning is [MODEL QUESTION]
   a) Analysis the return on investment and discounted cash flow of various resource scenarios
   b) Identifying the resource pool available to the project
   c) Consideration of the effect of project decision on the cost of using the product
   d) Determining what physical resources and what quantities of each should be used to perform project activities

Answer: (a)

5. Which one of the following is in the correct sequence of project family tree? [MODEL QUESTION]
   a) Plan > Programme > Project > Work Package > Task > Activity
   b) Plan > Project > Programme > Work Package > Task > Activity
   c) Project > Plan > Programme > Work Package > Task > Activity

Answer: (c)

6. Commissioning of a project [MODEL QUESTION]
   a) Precedes installation of the project
   b) Succeeds installation of the project
   c) Has no temporal relationship with installation of the project
   d) The relationship depends on the specific situation

Answer: (d)

7. Project cost reduction can be achieved through [MODEL QUESTION]
   a) Value Engineering
   b) Line-of-balance
   c) Feasibility study
   d) All of these

Answer: (a)

8. Which of the following gives the independent float of an activity? [MODEL QUESTION]
   a) Free float-Head slack
   b) Total float-Tail slack
   c) Free float-Head slack-Tail slack
   d) Total float-Head slack-Tail slack

Answer: (a)

9. In network analysis an activity that needs no resource or time is called [MODEL QUESTION]
   a) Preceding activity
   b) Subsequent activity
   c) Dummy activity
   d) Dangling activity

Answer: (c)

10. Which of the following statements is NOT true? [MODEL QUESTION]
   a) A network is a set nodes and arcs
   b) A project is represented as a directed network
   c) The length of the arrow represents the duration of the project activity
   d) A road network is a non-directed network

Answer: (a)

11. What is the basic objective of a work breakdown structure (WBC)? [MODEL QUESTION]
   a) Identifying project personnel required
   b) Identifying project resources
   c) Identifying project activities
   d) Identifying project activity interrelations

Answer: (d)

12. An Organisational Breakdown Structure (OBS) is used to identify [MODEL QUESTION]
   a) The reporting structure and current availability of all individuals in the project
   b) Technical ability and line of communication for all individuals in the project
   c) Lines of communication and responsibility for all the individual managers in the project
   d) The reporting structure and lines of communication for all individuals in the project

Answer: (a)

Short Answer Type Questions

1. Write brief note on Free Float, Independent Float and Total Float. **[MODEL QUESTION]**

Answer:

Free Float

Free float of an activity is the delay that can be permitted in an activity so that succeeding activities in the path are not affected. If the succeeding activities are to remain un-affected by the delay in a particular activity the Earliest Start Time (T_E) of the head event of that activity shall not be exceeded.

Independent Float

Independent float of an activity is the spare time available for that activity, if that activity is started as late as possible and is finished as early as possible. Independent float can be given by the following relationship.

Independent float of an activity	=	T_L of the head event	-	T_L of the tail event	-	Duration of the activity.	

In general,

Independent float of activity-(i – j) = $(T_E)j - (T_L)I - tij$

Total Float

Total float represents the maximum time by which the completion of an activity can be delayed without affecting the project completion time.

If an activity is delayed by a time equal to his float, that activity and all other subsequent activities in that path become critical activities.

2. What are the benefits of Line of Balance (LOB) technique? **[MODEL QUESTION]**

Answer:

Line of balancing technique is a managerial technique for ascertaining the progress of various phases (or activities) of a project on any particular date. LOB technique is an extension of Gnatt chart.

Since LOB technique indicates the progress of various phases of a project on a particular date, it provides the management the facility of applying the concept of 'management by exception'. The LOB chart gives a pictorial view of the progress of the activities. Using the LOB chart, we will be able to identify those activities that are progressing as per the plan, the activities that are lagging behind the schedule and also the activities that progress ahead of the schedule.

3. State the differences between PERT and CPM. **[MODEL QUESTION]**

Answer:

The fundamental network of PERT and CPM are though identical, yet there are certain differences in details as mentioned below:

PERT	CPM
1. A probabilistic model with uncertainty in activity duration. Expected time is calculated from to t_m and t_p	1. A deterministic model with well-known activity (single time based upon past experience). It assumes that, the expected time is actually the time taken.
2. An event-oriented approach.	2. An activity-oriented system.
3. PERT terminology uses words like network diagram, event and slack.	3. CPM terminology employs words like arrow diagram, nodes and float.
4. The use of dummy activities is required for representing proper sequencing.	4. The use of dummy activities is not necessary. The arrow diagram thus become slightly simpler.
5. PERT basically does not demarcate between critical and non-critical activities.	5. CPM mark critical activities.
6. PERT find applications in projects where resources (man, materials and specially money) are always made available us and when required.	6. CPM is employed to those projects where overall costs is of primary importance. There is better utilization of resources.
7. Especially suitable in defence Projects and R and D where activity times cannot be reliably predicted	7. Suitable for problems in Industrial setting, plant maintenance, civil construction projects: expansion schemes etc.
8. PERT has three-times estimates.	8. CPM has one-time estimate.

4. Define the following: **[MODEL QUESTION]**

i) PRISM

ii) Resource Scheduling

iii) Project Milestone

Answer:

i) PRISM:

- The term PRISM refers to the sustainability based project delivery method which incorporates tangible tools and methods for managing the balance between finite resources, social responsibility and delivering **green** project outcomes.
- PRISM was developed for organizations to integrate project process with sustainability initiatives for achieving business objectives while decreasing the negative environmental impact.
- PRISM is processes – based, structured project management methodology that highlights areas of sustainability and integrates them into traditional core project phases.
- One of the most significant of PRISM's features is the concept of the sustainability management plan that govern aspects of a project to consider **five** measurable elements like **people, planet, profit, process** and **product.**

ii) Resource Scheduling:

- **Resource scheduling** refers to the flexible, configurable module that adapts to the organisation's business practices, people and projects.
- Resource scheduling allows the project managers to define staffing needs and also helps resource managers decide how best to fulfill those requirements.
- Resource scheduling helps, in matching people and projects in the following ways:
  - → Start the project faster
  - → Model staffing needs with precision
  - → Increase resource utilization by more efficiently matching supply and demand
  - → Increase the morale of the employees and retention by considering skills, preferences and professional development needs into account when making resource assignment.
- Again, the resource scheduling process has **three steps**.
  - → **Allocation:** It involves identifying what resources are needed to complete the work
  - → **Aggregation:** Once resource allocations are complete, the resources can be aggregated on a daily, weekly or monthly basis as appropriate.
  - → **Scheduling:** For certain resources, time, schedule has to adjusted to take into account the limited availability of resources over time. Resource smoothing is used when the time constraint takes priority. Again, resource leveling is used when limits on the availability of resources are paramount.

iii) Project Milestone:

- **Milestones**, used in the project management, are tools used in project management to mark specific points along a project timeline.
- These points may signal anchors like a project start and end date.
- Project milestones focus on major progress points that must be reached to achieve success.
- Project milestones are used for managing the project work effort, monitoring results and reporting meaningful status to the project stakeholders.
- Project milestones possess certain key characteristics. They are:
  - → Milestone can be highly significant task, event, occurrence or decision.
  - → Milestone can be any significant checkpoint or any phase in the project life cycle stage.
  - → Milestone can be for any specific percentage complete for any given amount of work.
  - → Milestone can be for any significant circumstance unique to a given project, etc.

5. Define Network analysis.

Answer: **[MODEL QUESTION]**

Network analysis is the strategies which are used for planning, scheduling, controlling, monitoring or coordinating large and complex project. Network analysis follows the

techniques of **Programme Evaluation and Review Technique (PERT) and Critical Path Method (CPM)** for scheduling the performance of any project.

Advantages of Network Analysis: The following are the major advantages of Network Analysis –

a) It is a powerful tool for planning scheduling and controlling of the project work.
b) It shows the interrelationship among the different activities of the project.
c) It minimizes the total cost and total time of performance.
d) It prevents errors of commission or Careless planning.
e) It generates confidence in the integrity of the schedule.
f) It helps to identify the critical jobs.
g) It can predict the trouble areas and nature, time and magnitude of future problems of the project.
h) It provides a unique method of resource allocation.
i) It simplifies communication and improves coordination.

Application of the Network Analysis: Network Analysis is applicable in the following areas of the capital projects – .

a) Introduction of new product
b) Research and Development engineering
c) Production or manufacture of different products or equipments.
d) Construction of building, halls, laboratories etc.
e) Repairs and maintenance of machineries and equipments. Maintenance may be of two types viz. planned maintenance and preventive maintenance.

6. Discuss briefly any three cost reduction methods in project management.

[MODEL QUESTION]

Answer:

Cost Reduction Methods

- Material cost reduction could be possible by value analysis and value engineering in designing and manufacturing of equipment.
- Variety reduction and standardization in procurement of components and consumables would reduce material cost of the project.
- A sizeable cost of equipment could be reduced by innovative make or buy decision.

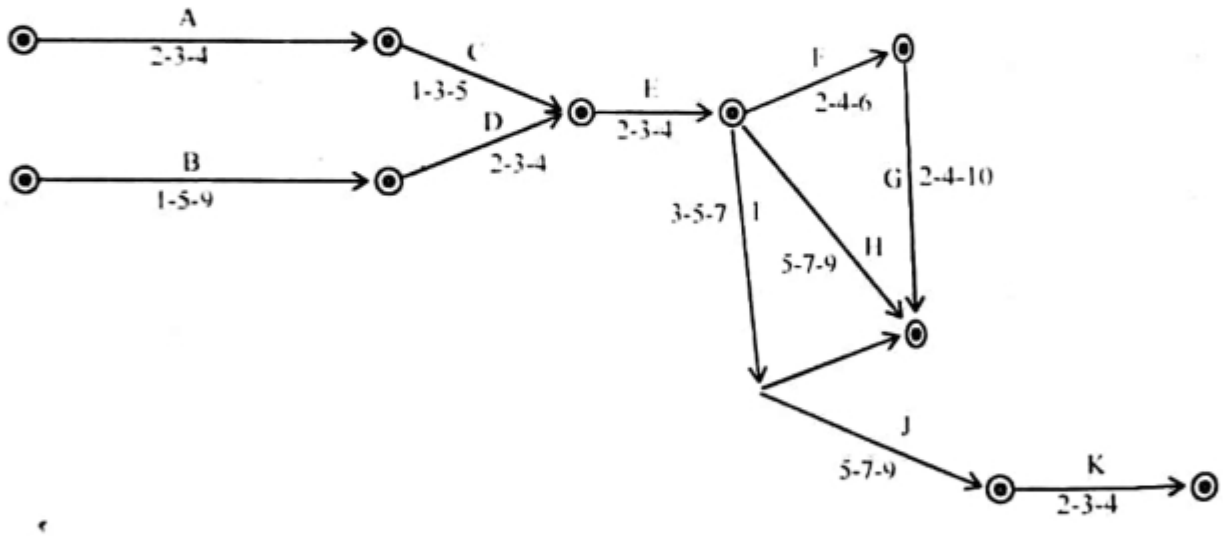
Long Answer Type Questions

1. A, R & D organization is preparing a project proposal for a major project to the Department of Information & Technology for development of a product of Disabled persons. The following table shows the activities, times and sequences required. **[MODEL QUESTION]**

Activity	*Immediate Predecessor*	*Time Estimates*		
		Optimistic	*Most Likely*	*Pessimistic*
A	–	2	3	4
B	–	1	5	9
C	A	1	3	5
D	B	2	3	4
E	C, D	2	3	4
F	E	2	4	6
G	F	2	4	10
H	E	5	7	9
I	E	3	5	7
J	G, H, I	5	7	9
K	J	2	3	4

a) Draw the network diagram.

Answer:

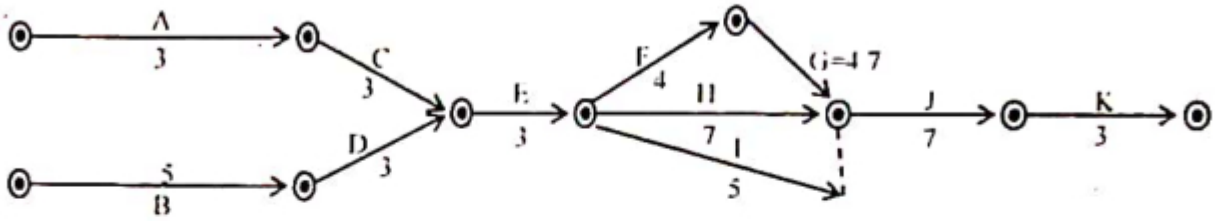


b) Show the calculation of ES, EF, LS, LF, expected time of each activity.

Answer:

Activity	Optimistic a	Most likely m	Pessimist b	Expected time $= \frac{1}{6}(a + 4m + b)$
A	2	3	4	3
B	1	5	9	5
C	1	3	5	3
D	2	3	4	3
E	2	3	4	3
F	2	4	6	4

Activity	Optimistic a	Most likely m	Pessimist b	Expected time $= \frac{1}{6}(a + 4m + b)$
G	2	4	10	4.7
H	5	7	9	7
I	3	5	7	5
J	5	7	9	7
K	2	3	4	3



c) Find the Critical Path and Expected Project Completion time.

Answer:

Critical path: B-D-E-F-G-J-K

$= 29.7$

$= 30$ days

2. a) Define the following terms with suitable examples: [MODEL QUESTION]
Dummy Activity, Total Float, Free Float, Independent Float, Slack.

Or,

Define the following terms with suitable examples:
Dummy activity, free float, slack, critical time, critical activity

b) The following table shows the activities, duration and sequences required:

Activity	*Immediate predecessor*	*Duration (Days)*
A	–	5
B	–	4
C	A	7
D	B	7
E	B	8
F	B	5
G	C, D	8
H	E, I	11
I	F	2
J	F	12
K	H, J	11

i) Draw the network diagram.

ii) Find the critical path by computation of Slack time $(T_l - T_l)$.

Answer:

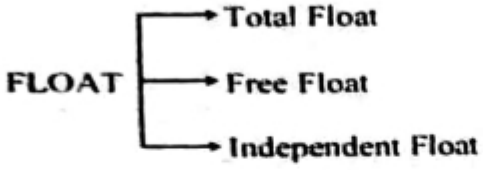
a) Dummy Activity

An arrow representing merely a dependency of one activity upon another is called a dummy activity. Dummy activities are jobs that do not have any duration or cost associated with them. They are introduced (a) to keep the logic of the network correct and

(b) to keep the unique numeric designation for event numbers at the tail and head of each arrow.

Float

- The term **float** refers to the length of time in which a non-critical activity can be delayed or extended without delaying the total project completion time.
- The float of the activities is the difference between either the latest start and earliest start. or between the latest finish and the earliest finish.



Total Float

- Total float represents the maximum time by which the completion of an activity can be delayed without affecting the project completion time

Free Float

- **Free float** refers to the length of time by which the completion time of every non-critical activity can be delayed without causing any delay in its immediate successor activities.

Independent Float

- **Independent float** refers to the length of time by which completion time of any non-critical activity can be delayed without causing any delay in its predecessor or the successor activities.

Slack

- The term **slack** pertains to events only. The slack of an event refers to the difference between its latest occurrence time and its earliest occurrence time.

Slack of an activity

- **Slack of an activity** refers to the amount of activity time that can be increased or delayed without delaying the project completion time.

Or,

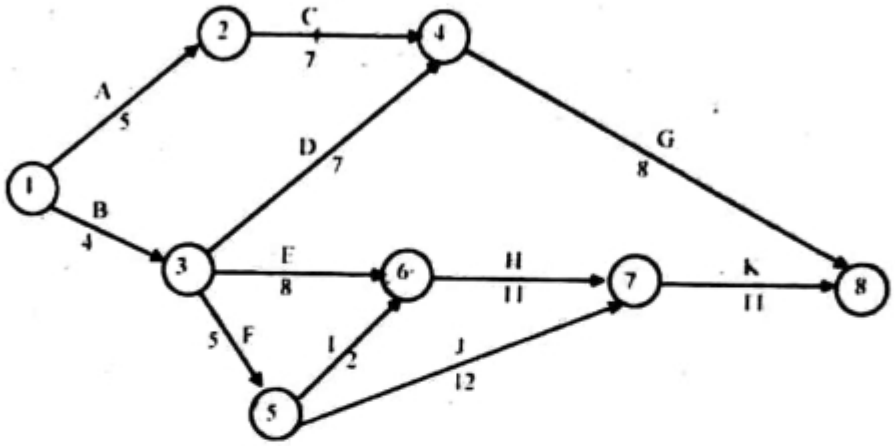
Critical time

Definition: If we have a project with clearly defined order-requirements and task times. for any task in the project. the task's forward critical time is the minimum amount of time that can elapse between the start of that task and the completion of the entire project.
If we have a weighted order-requirement digraph for the project. this definition is equivalent to saying the task's forward critical time is the largest weight we get for any path that starts with that task. The critical time for the project is the largest forward critical time present among the tasks within the project.

Critical activity

Definition: A critical activity is any activity that is on the critical path. Critical activities, as the name says, are critical to the health and the progress of the project. If there's a delay in any of these activities then the whole project will be delayed. Critical activities should be closely monitored by the project manager, and should be estimated accurately. If the project manager is not sure about the length of a critical activity when scheduling a project (even after heavy consultation and discussion with the project team about this particular activity), then he should add sufficient padding to make up for all the uncertainty.

b) Problem



Solution:

Event-1:

This is the start event or initial event. Hence its Earliest Start Time is Zero.

i.e., T_E (of event-1) = 0

Event-2:

Event 2 represents the end of activity 'A' as well as the beginning of activity 'C'. There is no difference between these two moments, i.e., activity 'C' can start at the very same moment when activity 'A' comes to an end.

Hence the Earliest Start Time of event-2 is given by

T_E (of event-2) = T_E (of event-1) + duration of activity-A

= 0 + 5

= 5

Event-3:

Activities D, E, & F can start at the very same moment activity 'B' comes to an end. Therefore, the Earliest Start Time (T_E) of event-3 is given by

T_E (of event-3) = T_E (of event-1) + duration of activity-B

= 0 + 4 = 4

Event-4:

At event-4 two arrows terminate and one arrow emerges. These means that event-4 represents the completion of two activities (activities-C & D) and the start of one activity (activity-G).

Let us calculate the earliest completion time of the two activities C & D.

Earliest completion time of activity-C

$= T_E$ (of event-2) + duration of activity-C

$= 5 + 7$

$= 12$

Earliest completion time of activity-D

$= T_E$ (of event-3) + duration of activity-D

$= 4 + 7$

$= 11$

Activity G can start only after both activities C & D are completed. While activity-D can be completed 11 days after the start of event-1. activity-C can be completed only 12 days after the start of event-1. Hence activity-G can start only after 12 days. Thus the Earliest Start Time (T_E) of event-4 is equal to the maximum of the two earliest completion time of the two activities C& D.

Therefore

T_E (of event-4) = 12

Event-5:

There is only one activity (activity-F) that enters the event-5.

Hence.

T_E (of event-5) = T_E (of event-3) + duration of activity-F

$= 4 + 5$

$= 9$

Event-6:

There are two activities (activities E & I) entering the node-6 and one activity (activity-H) leaving from the node-6 (events are also sometimes referred as 'nodes').

Activity-H can start only after both the activities E & I are completed. Hence the Earliest Start Time (T_E) of event-6 is given by the maximum of the following two time estimates a & b.

(a) T_E (of event-3) + duration of activity-E

$= 4 + 8$

$= 12$

(b) T_E (of event-5) + duration of activity-I

$= 9 + 2$

$= 11$

Therefore, activity-H can start only after 12 days from the commencement of the project. Hence, the Earliest Start Time (T_E) of event-6 is 12 days.

i.e.. T_E (of event-6) =12

Event-7:

Working on the similar lines as explained for event-6. T_E (of event-7) is the maximum of the two time estimates a & b.

(a) T_E (of event-6) + duration activity-H

i.e.. $= 12 + 11$

$= 23$

(b) T_E (of event-5) + duration of activity-J

$= 9 + 12$

$= 21$

Therefore TE (of event-7) = 23

Event-8:

This is the final event. Since there are two activities entering this node. T_E for this event is the maximum of the two-time estimates a & b.

(a) T_E (of event-4) + duration activity-G

$= 12 + 8$

$=20$

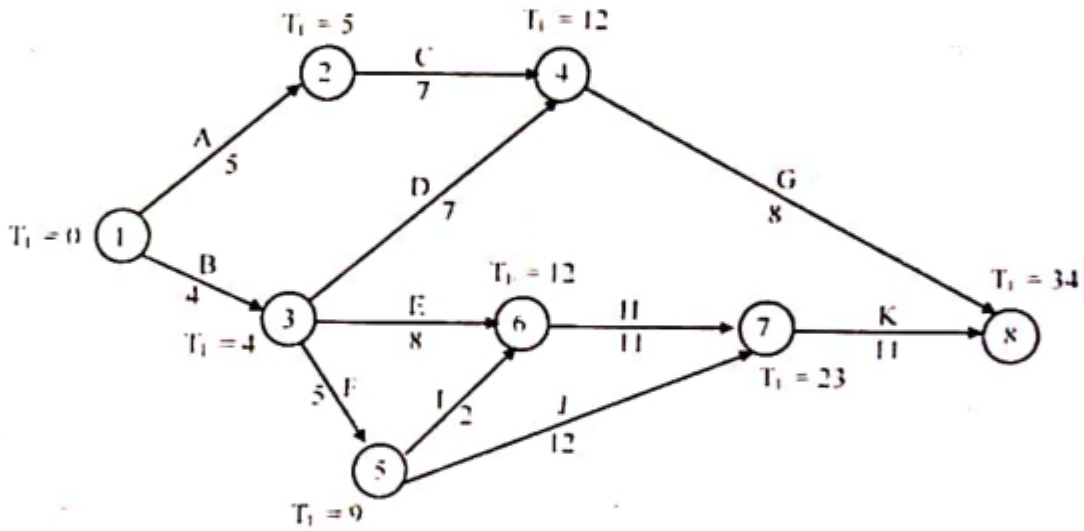
(b) T_E (of event-7) + duration activity-K

$= 23 + 11$

$= 34$

Therefore. T_E (of event-8) = 34

Fig: below show the earliest Start Time (T_E) of all the events at the respective nodes.



3. (i) What do you mean by Line of Balance?

(ii) There is a project of building 5 identical row houses. On each house, the following four works are to be done: 'Foundation, Brickworks, Roof Construction and Internal Works. Foundation is assigned to Team-A who takes one month per house. Brickworks are assigned to Group-B which takes two months per house, Roof Construction is assigned to Group-C which takes half month per house and internal works are assigned to Group-D who takes one month per house.

Draw a LOB Chart for the above and hence calculate the total time for project completion. **[MODEL QUESTION]**

Answer:

i) Line of Balance

- **Line of Balance (LOB)** is a managerial technique adopted in project planning where the planning is made with the help of graphics.
- **LOB** helps to ascertain the progress of the various phases/activities of a project on any particular date.

- The LOB graph can give a pictorial view of the progress of the project activities and one can easily identify the activities that are progressing as per the plan, the activities that are lagging behind the schedule and also the activities that are progressing ahead of the schedule.

Applicability the LOB method

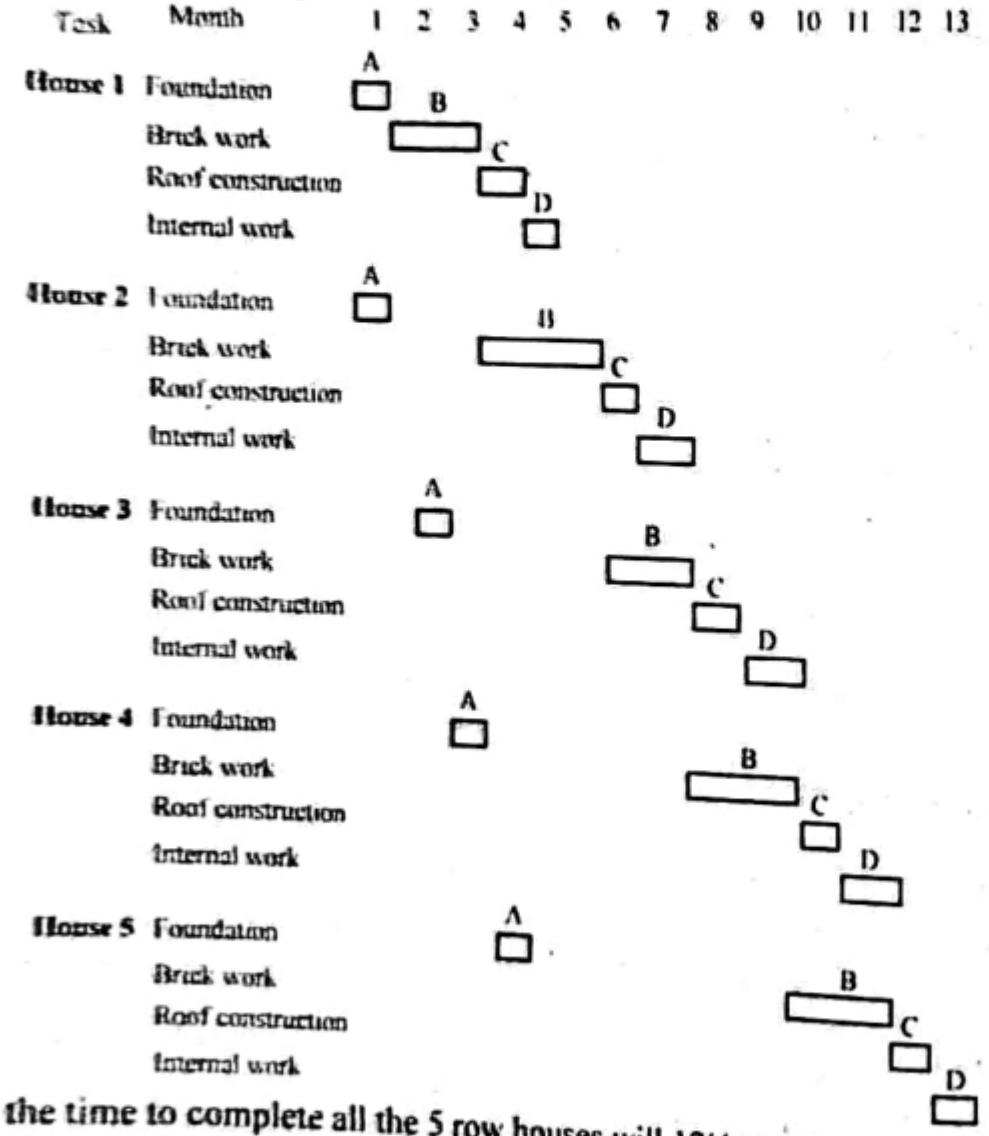
The LOB method is applicable in the following projects:

i) Projects with multiple similar projects and the production process is same

ii) Big projects where large quantity of same materials are used, and

iii) Projects with repetitive activities having same type of production undertaken.

ii) Line of balance diagram



So the time to complete all the 5 row houses will 12½ months.

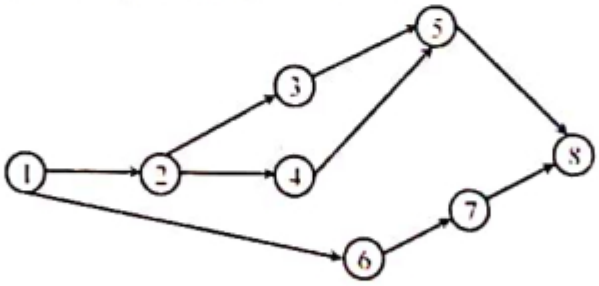
4. The following table lists the jobs at a network with their time estimates

Job $(i-j)$	Optimistic (t_o)	Most likely (t_m)	Pessimistic (t_p)
$(1-2)$	3	6	15
$(1-6)$	2	5	14
$(2-3)$	6	12	30
$(2-4)$	2	5	8
$(3-5)$	5	11	17
$(4-5)$	3	6	15
$(6-7)$	3	9	27
$(5-8)$	1	4	7
$(7-8)$	4	19	28

i) Draw the project network.
ii) Compute the expected time for each activity.
iii) Determine the critical path and expected project duration.
iv) Calculate the variance of critical path.
v) What is the approximate probability that the jobs or the critical path will be completed in 41 days. $P(Z \le 1.0) = 0.84$ **[MODEL QUESTION]**

Answer:

i) The project network arrow diagram is given below.



ii) Computation of expected times and variances

Job	Time (days) (a)	(m)	(b)	Expected time $t_e = \frac{a+4m+b}{6}$	$\sigma_t = \frac{b-a}{6}$	σ_t^2
1-2	3	6	15	$(3+4\times6+15)/6 = 7$	$(15-3)/6 = 2$	4
1-6	2	5	14	6	2	4
2-3	6	12	30	14	4	16
2-4	2	5	8	5	1	1
3-5	5	11	17	11	2	4
4-5	3	6	15	7	2	4
6-7	3	9	27	11	6	36
5-8	1	4	7	4	1	1
7-8	4	19	28	18	4	16

(a) → Optimistic time, (m) → Most likely time, (b) → Pessimistic time

(iii) Using the expected times of activity duration, we obtain,

1–2–3–5–8	Time	36 days
1–2–4–5–8	Time	23 days
1–6–7–8	Time	35 days

So, critical path is 1–2–3–5–8 with expected project duration 36 days

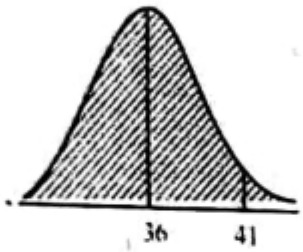
iv) The critical path is

1–2–3–5–8 with variance as 4+16+4+1 = 25 days

v) Project duration is assumed to be normally distributed with mean 36 days and s.d $= \sqrt{25} = 5$ days.

So the probability of project completion is on the left hand side of the graph given below.

$$z = \frac{41 - 365}{5} = 1$$



Since $P(z \le 1.00) = 0.84$ we conclude that the probability of completion of the project in 41 days is 0.84.

5. Write short notes on the following: **[MODEL QUESTION]**

i) Gantt Chart and Line of Balance

ii) Value engineering

iii) Gantt Chart

iv) Dummy Activity

Answer:

i) Gantt Chart and Line of Balance:

Line of balancing technique is a managerial technique for ascertaining the progress of various phases (or activities) of a project on any particular date. LOB technique is an extension of Gnatt chart.

Since LOB technique indicates the progress of various phases of a project on a particular date, it provides the management the facility of applying the concept of 'management by exception'. The LOB chart gives a pictorial view of the progress of the activities. Using the LOB chart, we will be able to identify those activities that are progressing as per the plan, the activities that are lagging behind the schedule and also the activities that progress ahead of the schedule.

ii) Value engineering:

Value Engineering is a fuction oriented, systematic team approach and study to provide value in a product, system or service. Often, this improvement is focused on cost

PROJECT MONITORING AND CONTROL

Multiple Choice Type Questions

1. In the domain of "Project Management" CPM stands for [MODEL QUESTION]
   a) Critical Project Monitoring
   b) Critical Path Method
   c) Casual Process Monitoring
   d) Capacity Performance Measurement

Answer: (b)

2. Which of the following is referred to as Crash time of a project? [MODEL QUESTION]
   a) Normal allowable time for a project activity
   b) Time beyond which cost reduction is not possible
   c) Time beyond which cost reduction is possible
   d) No float time

Answer: (b)

3. Intangible assets of a company consists of [MODEL QUESTION]
   a) patents
   b) copyrights
   c) trade secrets
   d) all of these

Answer: (d)

4. Which of the following is measure of strategic evaluation? [MODEL QUESTION]
   a) Earning per share
   b) Working capital cycle
   c) Performance appraisal system
   d) Balanced score card

Answer: (a)

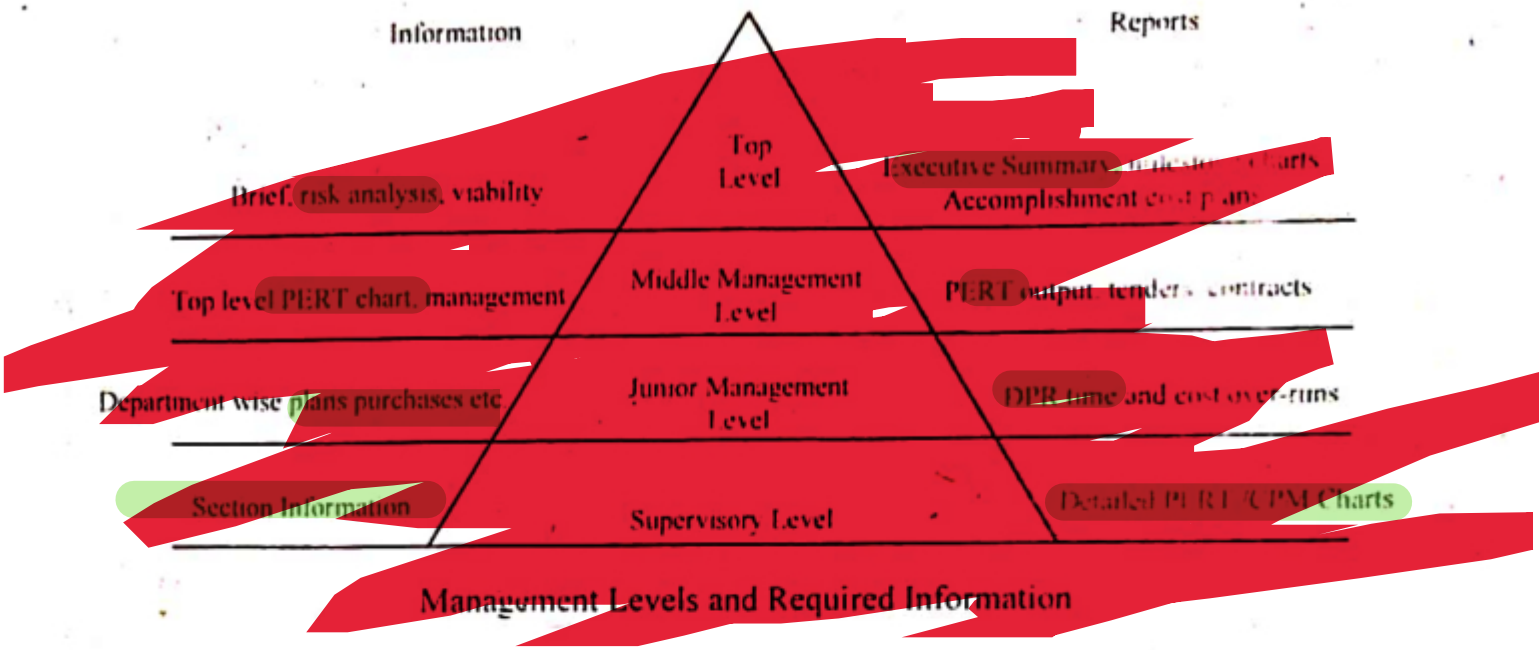
Short Answer Type Questions

1. Explain how MIS is related with Project Management? [MODEL QUESTION]

Answer:

The management information system must be evolved to generate the required reports so that cost, time and work can be monitored. Different levels of management require different reports at the varying frequency. The following Figure gives a pictorial idea about report requirements at various levels.

There are many reports and information sought on a regular basis as well as on need basis. A list of three types of reports is given below,



Management Levels and Required Information

2. State the role of Project Auditor. **[MODEL QUESTION]**

Answer:

The project auditor has to investigate the underlying records, ascertain the tangible results of work done, look at the process and calibre of project management, examine the project methodology and techniques and get a clear picture of the project organisation and controls. He should then be able to:

1. Comment on current status;
2. Forecast the future status;
3. Highlight critical management issues;
4. Point out exposure to risk and potential losses.

Long Answer Type Questions

1. What is Project Audit? Discuss the scope and objectives of Project Audit. **[MODEL QUESTION]**

Answer:

W.S. TURNER, in his book on PROJECT AUDITING METHODOLOGY, defines project audit as a formal and systematic examination of the performance of an ongoing project as compared to its requirements. It involves measurement against predefined and relevant standards. It also constitutes an independent and authentic source of information and critique on the project and might often call for the auditor's personal judgement. Without impinging on enterprise management's prerogative and responsibility, it supports management in diagnosis and decision-making. The enterprise management should perceive project audit as a normal component of its quality management initiatives.

The objectives of project auditing can be viewed in terms of the help it renders to the enterprise management in:

- Creating awareness among the project staff of the types and magnitude of the problems that are likely to be encountered in completing the project and producing quality products, in planned volume and at competitive costs.
- Providing a clear picture, from time to time, of the actual status of the project.
- Prompt identification of the factors that might cause product quality problems or lead to time and/or cost overruns.
- Timely spotting of a variety of generic problems that are associated with execution of projects.
- Enabling the creation of a good information base for a proper estimation and costing of the project.
- Assisting in the establishment of appropriate standards and systems and recommending suitable work techniques;
- Identifying the specific training needs with reference to the project tasks; and
- Formalising the experience and expertise in project management in order to be able to provide consultancy services to other enterprises.

2. Enumerate the advantages of Computer aided Project Management. Show different components of a Web based Enterprise-wide Project Management and explain briefly its functioning system. [MODEL QUESTION]

Answer:

CAMP is required because of the following

i) When the size of Project increases, it becomes difficult if not impossible to plan, schedule budget and control Project activities using manual techniques. Therefore for large Project use of computers is a matter of necessity.

ii) In Project Company handling multiple projects and different Project sites, appropriate resource allocation and resources levelling as a whole requires the use of computer.

Advantages

a) CPMS (computerises Project management system) can analyse problem with very high speed compared to manual analysis. Because of speed, the number of permutations and combinations could be handled easily.

b) CMPS is essential for large projects of complex nature, which generates large volume and data. Such voluminous data cannot be handled manually.

c) Accuracy of result in CMPS can be relied upon over manual process.

d) CPMS reduces requirement of precious manpower. It reduces clerical manpower.

e) A Project manager, who is responsible for all activities, can directly deal with all datas without involving other persons.

Essential requirements of Project Management Software

(i) It should have the capacity to integrate the data of all Projects operating at different sites.

(ii) It should have the filtering capacity to extract a set tasks and milestone from a scheme for the purpose of analysis and reporting.
(iii) It should support a range of file formats for importing and exporting of data.
(iv) It should support a variety of Graphs, and Report in different format.

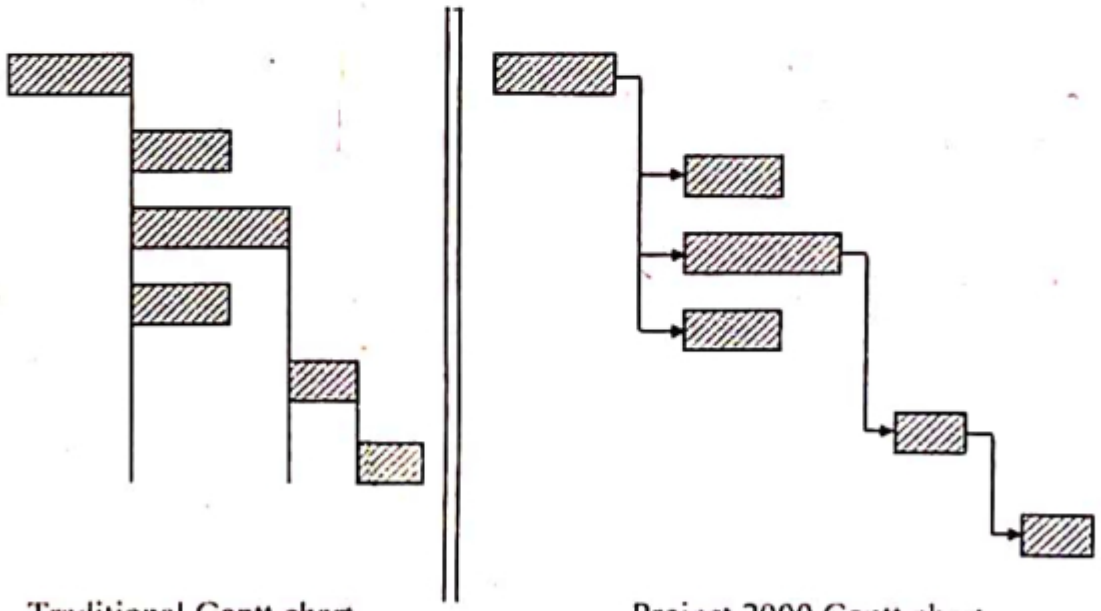
Software Packages for CPMS

The first project management software tools were developed in late 1960s for the mainframe computers. During 1970s and 1980s Project Management software packages suitable for microcomputers were developed. By 1990 there were over 100 software packages for use. Some of the popular software packages commonly used are as below:

Microsoft Project
Harvard Total Project Manager
Project planner
PRISM → Developed by TCS
YOGNA
INSTA PLAN → Developed by WIPRO
QUICK NET
PC- PROZAKS
Proman
Project scheduler 8

Microsoft Project 2000 is most popular. The various features and facilities available in Project 2000 are as below:

- Gantt chart



Traditional Gantt chart Project 2000 Gantt chart

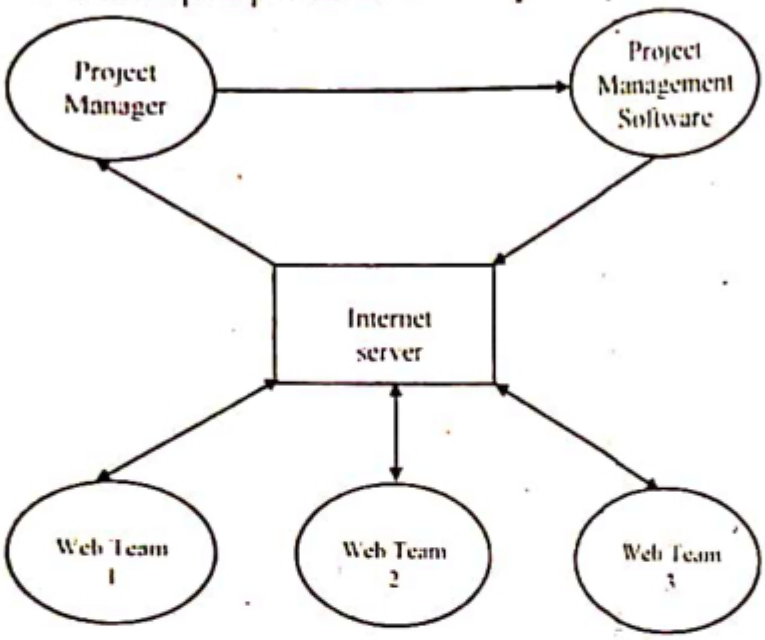
In Microsoft the link lines in Gantt chart shows series and parallel relation between activities.

Enterprise–Wide Project Management

It is a web based project management system in which multiple Projects are monitored from one central location. It allows collaborative planning among Project Managers and Project Executives. Microsoft central and Project Communicator are two popular web based project management software tools.

Using Spread Sheets for Financial Projects

Spread sheet package like Lotus 1-2-3 and MS-Excel help in developing financial projections like profitability, cash flow, Break-even estimates etc. The advantage of spread sheet is that it can help to perform sensitivity analysis of financial projections.



3. Describe and explain the application of the strategies of strategic control. Explain how a comprehension system of strategic control will operate in a large sized business organization. **[MODEL QUESTION]**

Answer:

1st Part:

Application of strategies of strategic control:

- Strategic control can be applied and exercised through four basic types of Strategies outlined below.

1. Premise control
2. Implementation control
3. Strategic surveillance
4. Special Alert Control

1: Premise Control

→ Establishing strategic control premise is very important to identify the assumptions on which the strategic control will be used.

→ There is need to forecast the future to avoid uncertainty and make the strategy a success. Assumptions are the expected future setting on which all strategy depends.

→ Under premise control, a strategy is built around certain assumptions about environmental and organizational factors.
→ Premise control may be internal and external. The internal premises include the organizational internal factors.
→ The external premises are derived from the external environments which are generally beyond the control of the organization.
→ Premise control helps the strategist to proceed with a strategy based on valid assumptions and reject the invalid premise.

2: Implementation Control

→ Once a strategy is initiated it has to be put into action, and this process is known as implementation of strategy.
→ The success of strategy depends on effective implementation. There are complexities in the task of implementation which arise from organizational matters like resources, structure systems, skills, culture, etc.
→ Implementation control helps to assess whether the plans, programmes and policies are actually guiding the organization towards achieving the predetermined goals and objectives of the organization or not.
→ As a method of implementation of a strategy, the milestone review may be initiated through which all the critical activities for proper implementation of a strategy are identified in terms of events, resource allocation, or time.

3: Strategic Surveillance

→ Strategic surveillance refers to a more generalized and overreaching control process designed to monitor a broad range of events which exist both inside and outside the organization and that act as a threatening force to the course of a firm's strategy.

4: Special Alert Control

→ Special alert control refers to the through and rapid reassessment or reconsideration of the organisation's strategy in response to certain sudden and unexpected events.
→ The exercise of special alert control can be done by the formulation of contingency strategies and establishing crisis management teams.

2nd Part:

Explain how a comprehensive system of strategic control will operate in a large sized business organization.

Answer:

Comprehensive system of strategic control:

- On the basis of the environment, the system of strategic control may be divided into two groups (i) **Strategic momentum Control** and (ii) **Strategic Leap control**.

Strategic momentum control:

→ Strategic momentum control may be used in case the organizations that operate in a relatively stable environment.

- For achieving the aims of strategic momentum control, a few techniques like **Responsibility control centre, underlying Success factors and Generic Strategic**, etc are used.
- Responsibility control centres are constituted by four types of centres, like **revenue, expense, profit** and **investment** centres.
- Underlying Success factors relate to the key success factors.
- Generic strategies refer to the comprehension of the strategic similar to the concerned company.

Strategic Leap control:

- Strategic Leap control may be used in case the organizations which face turbulent environment.
- Strategic leap control is used to cope with the emerging environment realities.
- For achieving the aims of strategic leap control, a few techniques may be used like **Strategic issue Management, Strategic Field Analysis, System Modeling** and **Scenarios.**
- Strategic issue management refers to the indentifying one or more strategic issues and assess their impact on the organizations.
- **Strategic Field Analysis** refers to the examination of the nature and extent of synergies that exist or lack between the components of an organization.
- **Systems modeling** refer to the models that simulate the essential features of the organization and its environment.
- **Scenarios** refer to the perceptions as to the likely environment a business organization would face in future.

4. Explain different types of strategic controls. **[MODEL QUESTION]**

Answer:

Different types of strategic controls are enumerated below:

There are four basic types of strategic controls. These are:

A: Premise control
B: Implementation control
C: Strategic surveillance
D: Special Alert control

A: Premise Control

- Establishing strategic control premise is very important to identify the assumptions on which the strategic control will be used.
- There is need to forecast the future to avoid uncertainty and make the strategy a success. Assumptions are the expected future setting on which all strategy depends.
- Under premise control, a strategy is built around certain assumptions about environmental and organizational factors.
- Premise control may be internal and external. The internal premises include the organizational internal factors.

→ The external premises are derived from the external environments which are generally beyond the control of the organization.

→ Premise control helps the strategist to proceed with a strategy based on valid assumptions and reject the invalid premise.

B: Implementation Control

→ Once a strategy is initiated it has to be put into action, and this process is known as implementation of strategy.

→ The success of strategy depends on effective implementation. There are complexities in the task of implementation which arise from organizational matters like resources, structure systems, skills, culture, etc.

→ Implementation control helps to assess whether the plans, programmes and policies are actually guiding the organization towards achieving the predetermined goals and objectives of the organization or not.

→ As a method of implementation of a strategy, the milestone review may be initiated through which all the critical activities for proper implementation of a strategy are identified in terms of events, resource allocation, or time.

C: Strategic Surveillance

→ Strategic surveillance refers to a more generalized and overreaching control process designed to monitor a broad range of events which exist both inside and outside the organization and that act as a threatening force to the course of a firm's strategy.

D: Special Alert Control

→ Special alert control refers to the through and rapid reassessment or reconsideration of the organisation's strategy in response to certain sudden and unexpected events.

→ The exercise of special alert control can be done by the formulation of contingency strategies and establishing crisis management teams.

5. What are the diverse criteria that are utilized for strategy evaluation?

[MODEL QUESTION]

OR,

What are the diverse criteria for strategic evaluation? **[MODEL QUESTION]**

Answer:

Diverse criteria that are utilised for strategy evaluation:

1. Establishment of Standards of Performance

- Standards refer to the objectives to be achieved and also represent desired performance. Standards act as a reference line or indicator or basis of comparison of actual performance.
- Setting of standards of performance is highly essential for controlling, because without such standards of performance, the extent of success of performance can not be monitored, regulated, evaluated, measured and corrected.
- Standards may be established as to quality, quantity, cost, time, investment, sales, revenue and many more specific standards for specific operations.

- Again, standards may be **tangible, or intangible. Tangible standards** are those standards which are capable of physical measurement and can be expressed in terms of units of weight, time, distance, colour, dimensions, or money etc. **Intangible standards** represent those standards which cannot be precisely expressed and measured directly, such as **good will** of an organization, or measurement of **employee morale** in an organization.

2. Appraising Actual Performance

- *The second step* in the control process is the appraising or evaluating the actual performance that has taken place. This step involves measuring the actual work done by various individuals, groups and units in terms of control standards and then comparing it with the established standards of performance.
- Comparison of actual performance with the standards set would be comparatively easier once the actual work done by various individuals; groups and units are appraised or evaluated.

3. Measuring Actual Performance against the Established Standards

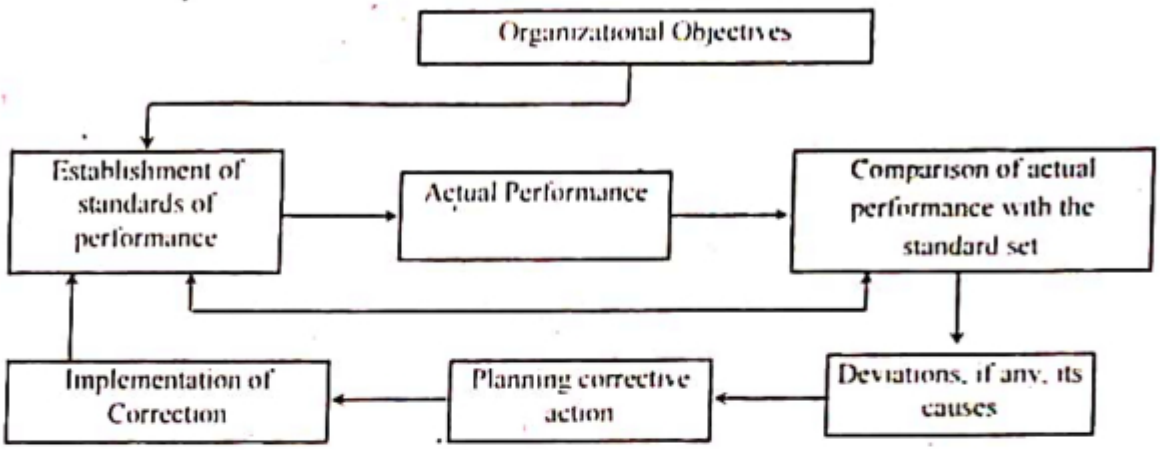
- *The third step* in the control process is comparison of actual performance against the standards set.
- The objective behind this step is to find out whether, and to what extent, actual performance is in conformity with the established standards of performance. Thus, this step involves in (i) finding out the extent of deviations from the actual, and (ii) identifying the causes of such deviations.
- Once the deviations are identified and revealed, the appraiser should try to analyze the various deviations from the standards and investigate into their causes, and communicate the appraisal to the persons responsible for taking corrective actions.
- As the standards of performance are varied, their measurement has to be done according to the nature of the standards. **For instance,** there is no problem in measuring the work performance expressed in terms of **tangible standards,** whereas **intangible standards** are difficult to measure directly.
- The necessity of control is highly desired when significant deviations have taken place and reported.
- While comparing the actual performance with established standards, managers should follow the **'principle of exception'**, that is, only such deviations should be reported which are of exceptional situations.

4. Correcting Deviations from Standards

- *In this final step* in the control process, various corrective measures, based on the control and deviation reports, are taken to bring the rest of the performance level as near to the standard as possible.
- The corrective or remedial measures intend mainly to correct the future activities.

- As the control process is forward looking, it necessitates that the variations from the standards set should be reported at the earliest so that corrective actions may be taken at an early date.
- Corrective action may relate to organizational plans, methods, machines, materials, men, correction of standards, directional dimensions, etc.

The Control Process at a Glance



6. Write short note on MIS & project management. **[MODEL QUESTION]**

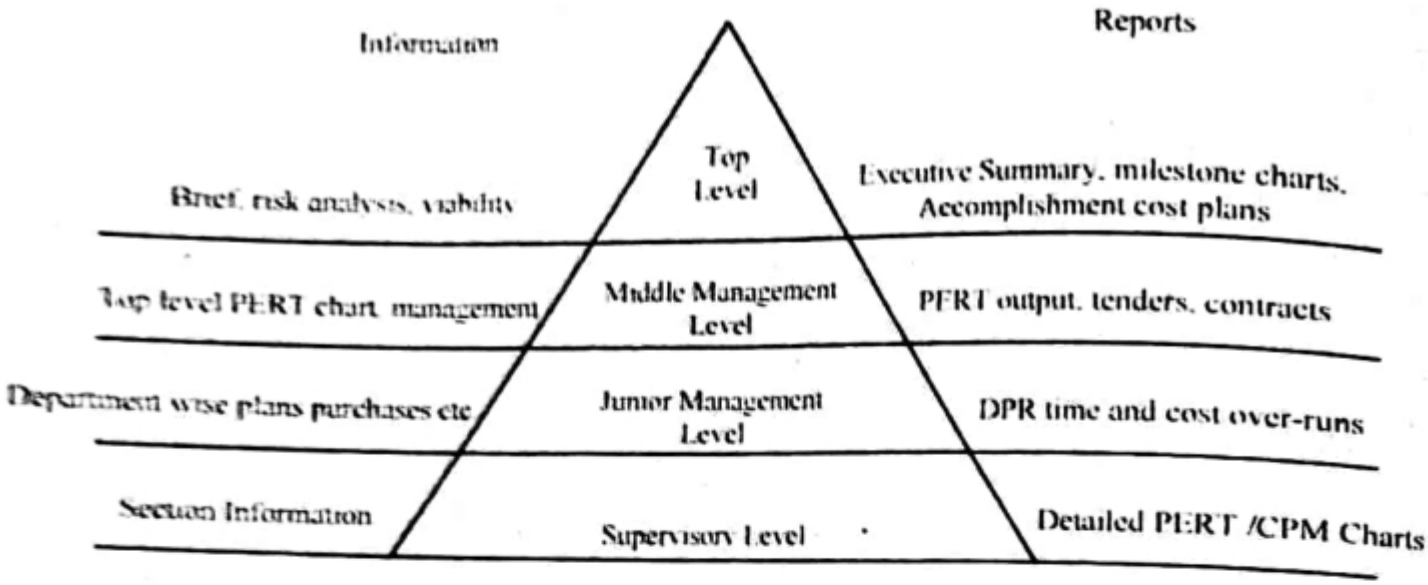
Answer:

Key areas of monitoring are the same as the key elements of projects. They are (i) time, (ii) cost, (iii) work quantity and (iv) work quality. There should be a constant monitoring of these elements during the project execution stage. These three are interrelated but there is no way one can put all these three together and develop a single parameter for their monitoring.

Control Reports

The management information system must be evolved to generate the required reports so that cost, time and work can be monitored. Different levels of management require different reports at the varying frequency. The following Figure gives a pictorial idea about report requirements at various levels.

There are many reports and information sought on a regular basis as well as on need basis. A list of three types of reports is given below:



Management Levels and Required Information

1. Cost Reports
   a) Activity cost report
   b) Cost flow report
   c) Variance report
2. Time and Effort Reports
   a) Time activity report
   b) Time analysis report
      - Programme schedule and work efforts are highly inter-related
      - These reports provide PERT/CPM type information
3. Work Status Report

Status index report (this report attempts to combine all three cost, time and work into a single index)

Alternatively the types of reports can be listed in six parts as follows:

1. Financial Reports
   a) Monthly commitment and expenditure
   b) Monthly cash flow forecast
   c) Monthly bank guarantee position
   d) Monthly outstanding payments to consultants, supplies and contractors
   e) Weekly retirement of documents through bank
2. Procurement-Monthly Reports
   a) Orders placement details
   b) Pending orders schedule
   c) Bids processing status
   d) Delivery forecast
3. Inspection Expediting Reports
   a) Weekly vendor-wise details status report
   b) Constraints report-technical and commercial
   c) Exception report

d) Sub-ordering report

4. Engineering Report
   a) Documents release and balance status report (monthly)
   b) Bid's technical scrutiny and recommendation report
   c) Construction drawings – release and status report
   d) Operation manual
   e) Model

5. Constructions and Erection Report
   a) Weekly job-wise, contractor-wise report
   b) Monthly detailed progress review
   c) Exception report

6. Project management
   a) Monthly overall review covering above aspects
   b) Exceptions and recommendations

The frequency and the details of project control reports are very need specific and therefore will vary from firm to firm and from project to project.

CASE STUDIES

Long Answer Type Questions

1. You are the founder of a fuel cell company that makes special batteries for electric cars. Your company has 77 employees. The company is down to three weeks of case. If the company does not bring in enough money before the Company will go out of business. You have a working product and are just starting to attract customers. A large company has offered to purchase your company for fraction of what it is worth. What do you do?

a) Analyze the case from the perspective of Project Management.

b) As an entrepreneur what do you do to get out of the situation?

[MODEL QUESTION]

Answer:

a) Special batteries for electric cars has already a good market and this will soon go on improving because of energy crisis in different fields as well as environmental pollution control. If the companies of 77 employees face a recession for three weeks from the perspective of project management the following three things have to be undertaken.

a) Check up the quality of human resource in the marketing department and arrange for their special training for marketing of batteries for electric cars.

b) If possible and require the dead woods may be replaced by live-wire, marketing staff.

c) The project report may be reviewed and profit and loss account may be readjusted.

b) As an entrepreneur one should take up the following steps to come out of the situation

i) To have a brainstorming session with the senior managers to find out the reasons for the slow down and immediately take up corrective means for cost reduction, better productivity, quality control and push selling.

ii) Give a push to all the employees by group wise discussion as well the circular informing that the company is not earning enough money during the last three weeks and payment of salary may be difficult at the end of the month.

iii) Think of alternative products, expansion and diversification in similar lines

iv) Discuss with your own people as well as outside experts what and whether any new products can be manufacture with the same plant and machinery and manpower

v) Discuss the banks regarding increasing the limit as well as delay in payment of loans

vi) Stop or extra payments like Puja bonus, medical payment, house building loan, travelling allowance etc.

vii) Give the buyers of your products from extra benefit to keep pace with your competitors.

viii) These benefits may be in terms of discount delayed payment of price reduction above certain limit of sales.

ix) Do not go with the same situation for an indefinite period

x) Start reducing the number of people by Voluntary retirement skill.

SOLUTION 2019

Group – A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for *any ten* of the following:

i) Which one of the following is/are involved in TRIZ toolbox?
- a) Innovatively improve existing product or process
- b) Develop innovation roadmap of product and process
- c) Understand market evolution and driving value parameters
- d) All of these

Chapter Name: "INFORMATION"
Answer: (d)

ii) Which of the following is alternatively called corporate venturing?
- a) Entrepreneurship
- b) Intrapreneurship
- c) Act of stating a new venture
- d) Offering new products by an existing company

Chapter Name: "IDEA INCUBATION"
Answer: (b)

iii) Which one of the following is *not* the step for designing and implementing a blue ocean strategy?
- a) determine where to start and create your team
- b) define the current state of the industry
- c) redefine market boundaries
- d) exploit the existing demand

Chapter Name: "ENTREPRENEURIAL MOTIVATION"
Answer: (d)

iv) ..... can be defined as process that enable an individual to take many action at one time to achieve desired goal
- a) attitude
- b) convergent thinking
- c) divergent thinking
- d) rational thinking

Chapter Name: "IDEA INCUBATION"
Answer: (c)

v) ..... shows the process of creating something new.
- a) innovation
- b) business model
- c) modeling
- d) creative flexibility

Chapter Name: "IDEA INCUBATION"
Answer: (a)

vi) Commissioning of a project
- a) precedes installation of the project
- b) succeeds installation of a project

c) has no relationship with installation of a project
d) may succeed or precede installation of a project

Chapter Name: "PROJECT FEASIBILITY STUDIES"
Answer: (a)

viii) "Resource leveling" is synonymous with
a) limited resource allocation
b) resource under-utilization
c) resource smoothing
d) resource hiring

Chapter Name: "PROJECT SCHEDULING AND COSTING"
Answer: (c)

viii) Which of the following is the optimum time for project completion?
a) time beyond which cost reduction is possible
b) time beyond which cost reduction is not possible
c) time for which total cost is zero
d) none of these

Chapter Name: "PROJECT FEASIBILITY STUDIES"
Answer: (a)

ix) Project "crashing" means
a) failure of the project
b) time cost trade off
c) closure of a project
d) none of these

Chapter Name: "PROJECT FEASIBILITY STUDIES"
Answer: (b)

x) Which of the following statements is *not* true?
a) a network is a set of nodes and arcs
b) a project is represented as a directed network
c) the length of the arrow represents the duration of the project activity
d) a road network is a non-directed network

Chapter Name: "PROJECT MONITORING AND CONTROL"
Answer: (a)

xi) Each project
a) has a definite beginning but not a definite and
b) involves many tasks, each having its own specialization to be performed by different agencies
c) has a uniform requirement of resources
d) usually follows a process type of layout

Chapter Name: "PROJECT MONITORING AND CONTROL"
Answer: (b)

xii) An entrepreneur into the hosiery business found out the reason his hosiery was not selling was due to its colour. What could be the best source of this information?
a) supplier
b) retailer
c) competition
d) government

Chapter Name: "APPLICATION AND PROJECT REPORTS PREPARATION"
Answer: (b)

Group – B
(Short Answer Type Questions)

2. What is SIDBI? State the functions of SIDBI.

Chapter Name: "INFORMATION"

Answer:

1st Part:

SIDBI

- **SIDBI** (Small Industries Development Bank of India) is a development financial institution, formed in 2nd April, 1990, headquartered at Luckno and having its offices all over the country.
- State Bank of India is the largest individual shareholder of SIDBI followed by the Government of India and LIC (Life Insurance Corporation of India)

2nd part:

Functions of SIDBI are stated as under:

- SIDBI is the primary financial institution for promoting, developing and financing MSME (Micro, Small and Medium Enterprise) sector.
- SIDBI helps MSMEs in acquiring the funds they require to grow, market develop and commercialize their technologies and innovative products.
- The Bank provides several schemes and also offers financial services and products for meeting the individual's requirement of various businesses.
- **Besides**, SIDBI covers mainly 6 products under Direct loans, namely –
  - → SIDBI Make in India Soft Loan Fund for micro, small and Medium Enterprises (SMILE).
  - → Smile Equipment Finance (SEF).
  - → Loans under partnership with Original Equipment Manufacturer (OEM).
  - → Working Capital (cash credit).
  - → SIDBI Trader Finance Scheme (STFS), and
  - → Loan for purchase of Equipment for Enterprise's Development (SPEED).

3. State the differences between PERT and CPM.

Chapter Name: "PROJECT SCHEDULING AND COSTING"

Answer:

Differences between PERT and CPM:

PERT	CPM
1. A probabilistic model with uncertainty in activity duration. Expected time is calculated from to t_m and t_p	1. A deterministic model with well-known activity (single time based upon past experience). It assumes that, the expected time is actually the time taken.
2. An event-oriented approach.	2. An activity-oriented system.
3. PERT terminology uses words like network diagram, event and slack.	3. CPM terminology employs words like arrow diagram, nodes and float.

PERT	CPM
4. The use of dummy activities is required for representing proper sequencing.	4. The use of dummy activities is not necessary. The arrow diagram thus become slightly simpler.
5. PERT basically does not demarcate between critical and non-critical activities.	5. CPM mark critical activities.
6. PERT find applications in projects where resources (man, materials and specially money) are always made available us and when required.	6. CPM is employed to those projects where overall costs is of primary importance. There is better utilization of resources.
7. Especially suitable in defence Projects and R and D where activity times cannot be reliably predicted	7. Suitable for problems in Industrial setting, plant maintenance, civil construction projects: expansion schemes etc.
8. PERT has three-times estimates.	8. CPM has one-time estimate.

4. What is DPR? Write down the contents of the DPR.

Chapter Name: "PROJECT FEASIBILITY STUDIES"

Answer:

1st Part:

DPR (Detailed project report)

Detailed project report (DPR) is the further step of Feasibility study report in firming up the proposal. When an investment proposal has been approved on the basis functional report and the proposal is a major proposal, it would be necessary to detailed project report to firm up the proposal for the capital cost as well as the various facilities. It includes...

- Examination of technological parameters.
- Description of the technology to be used.
- Broad technical specification.
- Evaluation of the existing resources.
- Schedule plan.
- General layout.
- Volume of work.

Hence, these reports are to be made before investment is made into project. Thus formulation of investment is based on the studies is made. These can be considered as pre-investment decision. Detailed project report is prepared only for the investment decision-making approval, but also execution of the project and also preparation of the plan. Detailed project report additionally includes that is contents in addition to Feasibility study reports are.

- Project description.
- Planning and implementation of the project.
- Specifications.
- Layouts and flow diagrams.

Detailed project report is a complete document for investment decision-making, approval, planning whereas feasibility study report is a base document for investment decision-

making. Detailed project report is base document for planning the project and implementing the project.

2nd Part:

Contents of the DPR

This will contain the detail information as below:

1. General information about the project
2. Back round & experience of the project promoters
3. Details and working results of industrial concerns already owned/promoted by the owners
4. Details of the proposed project
   - Plant capacity
   - Manufacturing process
   - Technical know how/tie up
   - Management team for the project
   - Details of land, buildings, plants and machines
   - Details of infrastructural facilities like power, water, transport etc.
   - Raw materials requirement/availability
   - Effluent treatment & discharge arrangement
   - Labour requirement/availability
5. Schedule of implementation of the project
6. Project cost
7. Means of financing the project
8. Working capital requirement/arrangement made
9. Marketing and selling arrangements
10. Profitability and cast flow estimates
11. Mode of repayment of term loan
12. Govt. approval, local bodies consent and statutory approvals
13. Details of co-lateral securities that can be offered to banks/FIs

5. What are steps of innovation management?

Chapter Name: "INTRODUCTION ON ENTREPRENEURSHIP"

Answer:

The steps/stages of innovation management are summarized as under:

1. Idea Generation and Mobilization

→ New ideas are created during idea generation. This step is the showing stage of the process.

→ Mobilization occurs when the idea is moved to a different physical or logical location.

2. Advocacy and Screening

→ Advocacy and screening help evaluate an idea and measures its potential benefits and problems, as not all ideas are worth implementing. From there, a decision can be reached about an idea's future.

3. Experimentation

→ This step/stage tests an idea, such as with a prototype or pilot test.

→ Experimentation leads to new ideas due to information that is gathered on the results and overall feasibility of the original idea.

4. Commercialisation

→ Commercialisation aims to create market value for an idea by focusing on its potential impact.

→ This is the step/stage of the innovation process when the focus shifts from development to persuasion.

→ After the idea is classified and business plan is created, it will ready for diffusion and implementation.

5. Diffusion and Implementation

→ Diffusion/Adaptation process refers to the mental process through which an individual passes from first learning about an innovation to final adaptation.

→ Diffusion is the company wide acceptance of an innovative idea, and implementation sets up everything needed to develop and utilize or produce the innovation.

→ Adoption and diffusion of any new product (innovation) slowly develops because of resistance and the time taken for communication of the innovation.

→ When early adopters follow the lead given by innovation, adoption process gains momentum and grows rapidly. The peak point arrives when most of the potential buyers have tried the new product.

6. Why is project purchase very important in Project Management?

Chapter Name: "PROJECT FEASIBILITY STUDIES"

Answer:

The importance of project purchase in Project Management are summarized as under:

- **Ensuring continuity in the supply of materials for the project**
  - → The purchasing function is to ensure continuity of the supply of raw materials, sub-contracted items and spare parts, which will facilitate the project management organisation to continue its project activities smoothly and uninterruptedly.
- **Ensuring Minimum Possible Investment**
  - → Project purchase is made in such a way as to ensure minimum possible investment in service operations in relation to purchased materials, such as cost of transportation, inspection, storing and record keeping, etc.. This will make a higher return on investment and ensure a better margin of profit for the project organisation.
- Ensures and manage the supply base efficiently and effectively.
- Ensures and keep purchasing strategies integrated into the project organisations goals and objectives.
- Ensures and support operational requirements of the project.

- **Lastly**, it is absolutely impossible for any project organisation to achieve its full potential without a successful purchasing activity.

Group – C
(Long Answer Type Questions)

7. a) State different floats of activities in a project network.

b) Information on the various tasks of a Project is given below. Draw the network diagram for this project and find the time needed for completion of the project. Determine the critical path of the project network. Calculate the floats of activities and slacks of events.

A and B are the first two activities of a project. Activity C follows A while activities D and E come immediately after B. Activities G and F come after activities C and D. Activity H comes after activities E and F. Activities G and H precede activity I. The activity durations are as follows:

Activity	A	B	C	D	E	F	G	H	I
Duration (Weeks)	5	10	8	10	14	10	12	14	4

Chapter Name: "PROJECT MONITORING AND CONTROL"

Answer:

a) The different types of floats of activities in a project network are stated as under:

1. Total Float (TF)

→ The amount of time that a schedule activity can be delayed or extended from its early start date without delaying the **project finish date** or violating a schedule constraint.

Mathematically: Late Finish – Early Finish = Total Float

2. Free Float (FF)

→ The amount of time that a schedule activity can be delayed without delaying the **early start date** of any successor or violating a schedule constraint.

Mathematically: Earliest Successors' Early start – Activity's Early Finish = Free Float.

3. Interfering Float (INTF)

→ The amount of time that a schedule activity can be delayed or extended from its early start date without **delaying the project finish date**, but delaying an activity into interfering float will delay the start of one or more following non-critical activities. If an activity is delayed for the amount of the Free and interfering Float, its successor activities are critical

Mathematically: Total Float – Free Float = Interfering Float

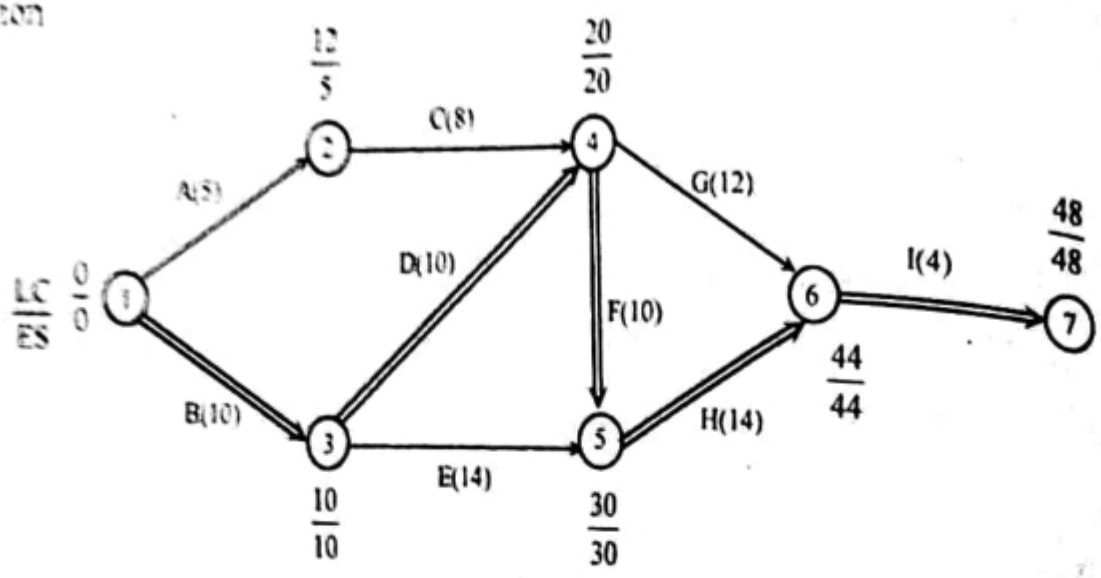
4. Independent Float (INDF)

→ The maximum amount of time an activity can be delayed **without delaying the early start of the succeeding activities and without being affected by the allowable delay of any predecessor activity.**

Mathematically: Earliest Successors' Early start – Earliest predecessors late Finish – Activity's duration = Independent Float.

b) Network diagram

Solution



∴ Critical path = 1 – 3 – 4 – 5 – 6 – 7

= B – D – F – H – I

= (10 + 10 + 10 + 14 + 4)

= 48

The longest path is called the critical path, so the project completion time is = 48

The following tables gives the critical path, total, free float calculation.

Activity		Normal time	Earliest		Latest		TF	PF
			Start	Finish	Start	Finish		
A	1-2	5	0	12	7	12	7	0
B	1-3	10	0	10	0	10	0	0
C	2-4	8	5	13	12	20	7	7
D	3-4	10	10	20	10	20	0	0
E	3-5	14	10	24	16	30	6	6
F	4-5	10	20	30	20	30	0	0
G	4-6	12	20	32	32	44	12	12
H	5-6	14	30	44	30	44	0	0
I	6-7	4	44	48	44	48	0	0

Total float = Latest start – Earliest start

Free float = Earliest finish – Latest finish

Slack = LC – ES

Event	1	2	3	4	5	6	7
Slack time	0	7	0	0	0	0	0

8. a) Explain the type of layout which is suitable for a project.

b) Information on the various tasks of a Project is given below. Draw the network diagram for this project and find the time needed for completion of the project. Determine the critical path of the project network. Calculate the floats of the activities and slacks of events.

Activity	Immediate Predecessor(s)	Duration (Weeks)
A	-	8
B	A	10
C	B	7
D	A	11
E	D	12
F	C	6
G	E	4
H	F, G	2

Chapter Name: "PROJECT FEASIBILITY STUDIES"

Answer:

a) Layout which is suitable for a project

→ **Layouts can be classified into the following five categories:**

1. Process layout / Functional layout.
2. Product layout / Assembly lines layout.
3. Combination layout.
4. **Fixed position layout also called project type layout**, and
5. Group layout or cellular layout.

→ **Out of the five types of layout, the fixed position layout, which is also called project type layout, is suitable for a project.**

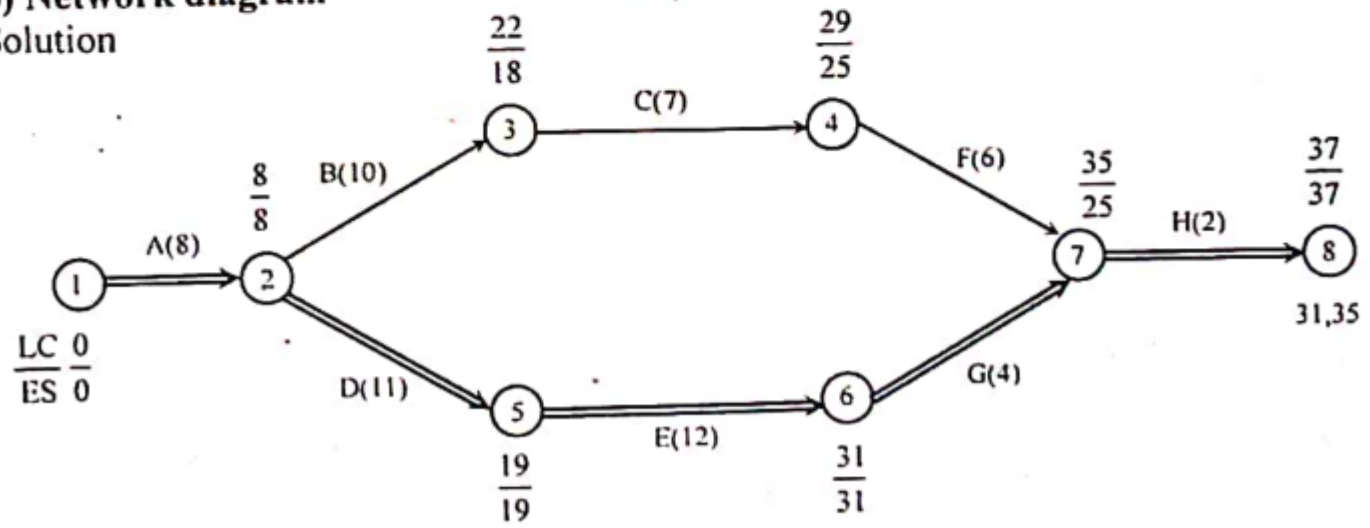
→ **In the project type layout**, the material, or major components remain in a fixed location and tools, machinery, men and other materials are brought to this location.

Advantages

- Helps in job enlargement and upgrades the skill of the operators.
- The project workers identify themselves with a product in which they take interest, and pride in doing the job.
- Flexibility is greater with this type of layout.

b) Network diagram

Solution



∴ Critical path = 1 – 2 – 5 – 6 – 7 – 8
= A – D – E – G – H
= (8 + 11 + 12 + 4 + 2)
= 37

∴ The project completion time is = 37.

Activity		Normal time	Earliest		Latest		TF	PF
			Start	Finish	Start	Finish		
A	1-2	8	0	8	0	8	0	0
B	2-3	10	8	18	12	22	4	0
C	3-4	7	18	25	22	29	4	0
D	2-5	11	8	19	8	19	0	0
E	5-6	12	19	31	19	31	0	0
F	4-7	6	25	35	29	35	4	4
G	6-7	4	31	35	31	35	0	0
H	7-8	2	35	37	35	37	0	0

∴ Total float = Latest start – Earliest start
= 1 – 2 (0 – 0)
= 0

∴ Free float = TF – Head event slack
FF of 1 2 TF of 1 2 – Slack event 2
= 0 – (8 – 8)
= 0 – 0
= 0

FF of 2 3 TF of 2–3 – Slack heal event 3
= 4 – (22 – 18)
= 4 – 4
= 0

Slack = (LC – ES)

Event	1	2	3	4	5	6	7	8
Slack time	0	0	4	4	0	0	0	0

9. a) State 5 costs reduction methods of project.
b) Information on the various tasks of a project is provided in the table below. Find the expected time needed for completion of the project and also determine the critical path of the project network. What is its variance?

Activity	Immediate Predecessor	Time Estimates (Days)		
		Most likely	Optimistic	Pessimistic
A	-	4	8	12
B	A	4	6	8
C	A	5	7	15
D	B	10	18	26
E	B	15	20	25
F	C	4	8	12
G	E	8	9	16
H	D, F	1	2	3
I	G, H	4	4	4
J	I	6	7	8

Chapter Name: "PROJECT MONITORING AND CONTROL"

Answer:

a) Five Cost Reduction methods of project are as follows:

- **Attention to initial project planning**

→ For overall development of a project, one of the most important criteria is paying attention to initial planning. This is the most essential component of a project management task and it is definitely act as a most powerful weapon to **reduce project schedule overruns.**

- **Application of High-End and Comprehensive Tools**

→ Successful project management relies on proper utilization of the necessary tools.

- **Planning the project Budget**

→ Budget overruns are a litmus test for project success or failure. Effective budget management is the primary area of focus for project management.

- **Application of Agile Project Management**

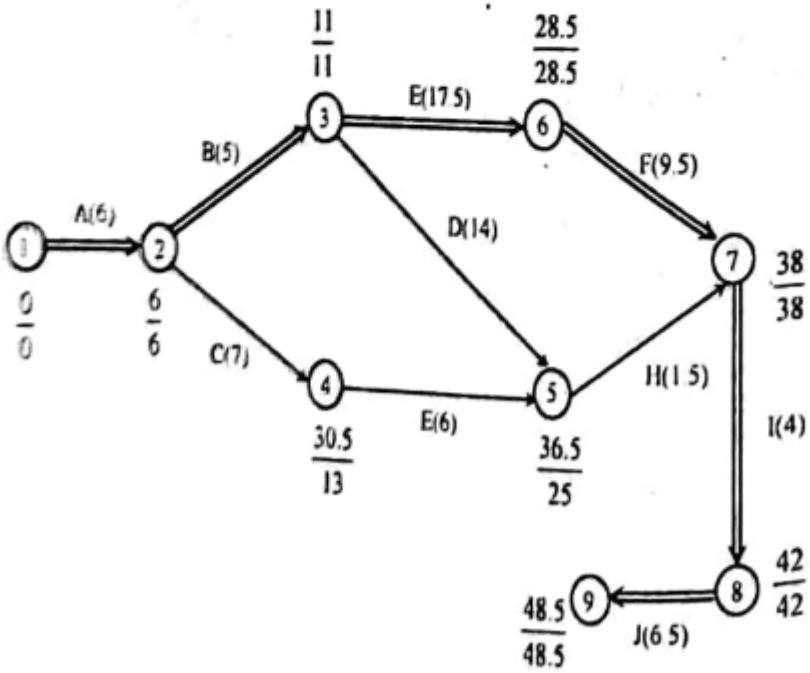
→ Agile project management is one of the most flexible project management models in use. Agile project management accepts that change is one of the major risks which needs to be dealt in projects. Change means a change in requirement change in timeline, change in budget, or any such factor which decides the project's success.

- **Constant Tracking**

→ A project manager needs to track the progress on each task constantly in order to make sure that everything is handled as per the highest standards. The project manager needs to utilize the **proper tools** and the **proper metrics**. Constant tracking will help to provide the opportunity to map out potential setbacks in the entire flow of work of the project and to handle it accordingly in advance.

b)

Activity	$t_e = \frac{t_0 + 4t_m + t_p}{6}$	$\sigma = \left(\frac{t_p - t_0}{6}\right)^2$
A	$\frac{8+4\times4+12}{6} = 6$	$\left(\frac{12-8}{6}\right)^2 = 0.44$
B	$\frac{6+4\times4+8}{6} = 5$	$\left(\frac{8-6}{6}\right)^2 = 0.11$
C	$\frac{7+4\times5+15}{6} = 7$	$\left(\frac{15-7}{6}\right)^2 = 1.77$
D	$\frac{18+4\times10+26}{6} = 14$	$\left(\frac{26-18}{6}\right)^2 = 1.77$
E	$\frac{20+4\times15+25}{6} = 17.5$	$\left(\frac{25-20}{6}\right)^2 = 0.694$
F	$\frac{8+4\times4+12}{6} = 6$	$\left(\frac{12-8}{6}\right)^2 = 0.44$
G	$\frac{9+4\times8+16}{6} = 9.5$	$\left(\frac{16-9}{6}\right)^2 = 1.36$
H	$\frac{2+4\times1+3}{6} = 1.5$	$\left(\frac{3-2}{6}\right)^2 = 0.0277$
I	$\frac{4+4\times4+4}{6} = 4$	$\left(\frac{4-4}{6}\right)^2 = 0$
J	$\frac{7+4\times6+8}{6} = 6.5$	$\left(\frac{8-7}{6}\right)^2 = 0.0277$



$\therefore$ C.P.M = 1 – 2 – 3 – 6 – 7 – 8 – 9
= A – B – E – G – I – J
= 6 + 5 + 17.5 + 9.5 + 4 + 6.5
= 48.5

The project completion time is = 48.5

The variance of project time

Critical activities = A + B + E + G + I + J

$$\alpha^2 = (0.44)^2 + (0.11)^2 + (0.694)^2 + (1.36)^2 + (0)^2 + (0.0767)^2$$
$$= 2.613629$$

The standard deviation of project time $= \sqrt{\text{variance}} = \sqrt{2.613629} = 1.62$ days

10. What is Entrepreneurship Development? Discuss the role of an Entrepreneur. How do you define Entrepreneur *vs* Manager?

Chapter Name: "INTRODUCTION ON ENTREPRENEURSHIP"

Answer:

1st part:

Entrepreneurship Development

- **The term Entrepreneurship** refers to a process of creating something different with value by devoting time, effort and energy, accompanying financial, psychic and other related risks.
- And **the term Development** refers to the overall growth of the individual in all respects. Development is used for a long term methodical and organized process by means of which people acquire the philosophical and conceptual wisdom for general application. **Development also refers to enhancing an existing potential or asset through the process of learning and application.**
- **Thus, Entrepreneurship Development** is the means of enhancing the knowledge and skill of entrepreneurs through, several classroom coaching and programmes and training.
- **In other words**, the entrepreneurship as a process helps entrepreneurs or ventures to get better in achieving their goals. It is a process about supporting entrepreneurs to advance their skills and encourage them to make better judgements and take a sensible decision for all ventures.

2nd part:

The role of entrepreneurs are summarized as under:

- **The Initiator:** The entrepreneur is the one who initiates the process of creating an enterprise by coming up with the idea for the business and planning out how to term that idea into a reality.
- **Creation of New Enterprise:** The entrepreneur is the key to the creation of new enterprises that energies the economy and rejuvenate the established enterprises that make up the economic structure.

- **Roles in Economic Growth:** An entrepreneur plays a vital role in economic growth of a country and provides / generates lot of employment opportunities amongst people and brings stability in economy.
- **As Economic Pioneers Initiating Changes in the Economy:** Entrepreneurs always strive to increase productivity and improve the quality of output through the application of more efficient production method, better plant-layout, more effective marketing techniques for obtaining maximum output at lower costs.
- **Entrepreneurs serve as the Spark Plug in the Economy's Engine:** Entrepreneurs occupy a central position in a market economy, activating and stimulating all economic activity. The economic success of nations worldwide is the result of encouraging and rewarding the entrepreneurial instinct.
- **Balanced Regional Development:** The growth of industries in less developed and backward areas, leads to infrastructure improvements like better roads, and rail links, airports, stable electricity and water supply, schools, hospitals, shopping malls and other public and private services that would not otherwise be available.
- **Improvement in Living Standard:** An entrepreneur assists in direct way for improving living standard of people and a person can spend his earnings to meet out the basic and comfortable needs along with the branded products or services at cheaper rate.

3rd part:

Defining Entrepreneur vs. Manager

Manager	Entrepreneur
1. A manager is normally and academically qualified person having a degree in Arts/Science/Commerce or Engineering and Technology along with an MBA	1. An entrepreneur may or may not be qualified and the academic qualifications may not be of much extra value in developing business
2. A manager is satisfied with his day-to-day management work of an existing running business owned by an individual group or a professional company belonging to share holders	2. An entrepreneur has to be mentally and physically busy all the time developing his own business, delving into the nitty-gritty of business problems and bearing the stress and strain.
3. A manager will normally get a fixed salary at the end of the month, and sometime may get a commission on production or marketing	3. An entrepreneur normally draws a monthly salary/alliance/lump sum from his business accounts which may be flexible depending on the business position. He may however siphon off some money from the business and either buy some shares/car or land/remove some money in separate account. This may be an honest effort or a business tactics depending on the

Manager	Entrepreneur
	particular entrepreneur.
4. A manager normally gets the backing and support of the senior managers and top people of the company and is normally a happy person with a regular stereo typed life style, going to office at 10.00 A.M and leaving at 5.00 P.M unless he is in a department where his presence is required at odd hours.	4. An entrepreneur on the other hand has a very irregular life, working hard throughout the day visiting Govt. offices. banks, customers etc. and coming back home very late at night. His earning per month is normally about four times of his contemporary manager if he is an successful entrepreneur.

11. a) Define the concept of Entrepreneurial Competency. State the objectives of it.
b) What is Entrepreneurial Mobility? Is there any relation with Motivation Theories?

Chapter Name: "IDEA INCUBATION"

Answer:

1st Part:

Concept of Entrepreneurial Competency

- Any business / venture operation is considered to be very complex in a competitive business environment which is constantly changing with fast technological advancements.
- An entrepreneur is expected to interact with these environmental forces which require him to be highly competent in different dimensions like **intellectual, attitudinal, behavioural, technical,** and **managerial** aspects.
- Entrepreneurs are therefore permanently challenged to deploy a set of competencies to succeed in their entrepreneurial endeavors.
- **Thus**, entrepreneurial competencies may be defined as underlying characteristics possessed by a person which result in new venture creation, survival and growth.
  → The characteristics include **generic and specific knowledge, motives, traits, self-images, social roles and skills, tolerance for ambiguity, locus on control, persistence, assertiveness, drive and energy, innovation and creativity, problem solving, persuasion, technical knowledge, communication and social skills and goal setting** and **perseverance, etc.**

2nd Part:

Objectives of Entrepreneurial Competency:

The objective of entrepreneurial competencies is to combine creativity, a sense of initiative, problem solving, the ability to marshal resources and financial and technological knowledge.

→ These competencies enable entrepreneurs to provoke and adapt to changes.

b) 1st Part:

Entrepreneurial Mobility:

- **Movement and mobility** is an integral part of human life, entrepreneurs being no exception.
- Entrepreneurs, like human being, move from one location to another and also from one occupation to another.
- This movement of entrepreneurs from one location to another and from one occupation to another occupation is referred to as entrepreneurial mobility.
- **Thus**, entrepreneurial mobility may be classified as under:
  1. **Occupational Mobility:**
     a) **Inter-generation movement:** When a person may move or leave from the occupation of his father, is called inter-generation movement.
     b) **Intra-generation occupational movement:** When a person may move or leave from his own occupation during the operational career, is called intra-generation occupational movement.
  2. **Locational Mobility:** It means movement or changes in location. This mobility depends upon certain factors like availability of raw materials, infrastructure and labour, nearness to market, own resources, knowledge, experience, socio political situation, etc.

2nd Part:

Relationship between Entrepreneurial Mobility and Motivation Theories:

- **Like motivation theories**, in the case of entrepreneurial mobility there are some important motivational factors which influence the entrepreneurial mobility in a given situation and time.
- An educated entrepreneur tends to be more mobile than an uneducated one.
- An experienced entrepreneur better perceives the available opportunities, better analyses his strengths and weaknesses and also understands the complexities involved in running an enterprise Technical Knowledge and experience influences the entrepreneurial mobility.
- The entrepreneurs may move from the areas with no or less facilities to the areas with more and better facilities. The facilities include: Government facilities – availability of raw materials, labours, market facilities and infrastructural facility.
- The entrepreneurial mobility is also influenced/motivated by the political factors – tax policy, employment laws, environmental laws, political stability, trade restrictions and tariffs, etc.