CHAPTER 7

THINKING

EXERCISE QUESTIONS

Question 1. Explain the nature of thinking.

Answer: Thinking is a complex mental process involved in manipulating and analyzing information, either collected through the senses from the environment, or stored in memory from past experiences.
Such manipulation and analysis occur by means of abstracting, reasoning, imagining, problem solving, judging and decision-making. It is an internal process that can be inferred from overt behavior.
Main features:

1. Thinking is the base of all cognitive activities.
2. It involves manipulation and analysis of information received from the ! environment.
3. Thinking is mostly goal directed and one desires to reach the goal by planning. Two building blocks of thinking?

- Thinking is a complex mental process and people think by means of mental images or concepts.
- Mental image refers to an image which is a mental representation of a sensor}' experience. In this we actually try to form a visual image of the whole situation.
- A concept is a mental representation of a category. It refers to a class of objects,
  ideas, events that share common properties, e.g. When we encounter new social situation, we try to categorise it on the basis of past experience and take action towards such situations.

Question 2. What is a concept? Explain the role of concept in the thinking process.

Answer: Concepts are mental categories for objects and events, which are similar to each other in one or in more than one way.

- They may be organised in schema. They are mental frameworks which represents our knowledge and assumptions about the world.
- Concepts are building blocks of thinking. They allow us to organize knowledge in systematic ways.
- Concept formation is a basic task of thinking i.e., identifying the stimulus properties that are common to a class of objects or ideas, e.g., in the activity, the participant has to classify the stimuli either on the basis of colour or shape. It is very helpful in the thinking process.

Question 3. Identify obstacles that one may encounter in problem solving.

Answer: Problem solving is thinking directed towards the solution of a specific problem,
Problem solving involves following mental operations which are as follows :

1. Identify the problem
2. Represent the problem
3. Plan the solution: Set sub-goals
4. Evaluate all solutions (plays)
5. Select one solution and execute it
6. Evaluate the putcome
7. Rethink and redefine problems and solutions

There are two major obstacles to solving a problem. These are mental set, and lack of motivation.
Mental set is a tendency of a person to solve problems by following

already tried mental operations or steps.
Lack of motivation is another obstacles to solving problems. Due to lack of motivation people give up easily when they encounter a problem or failure in implementing the : first step. Therefore, there is a need to persist in their effort to find a solution.

Question 4. How does reasoning help in solving problems?

Answer: Reasoning is a form of problem solving. It is goal directed activity and involves inferences.
Reasoning is the process of gathering and analyzing information to a arrive at a conclusion.
Types of reasoning:

1. **Inductive Reasoning:** Reasoning is based on specific facts and observations. Through this reasoning people analyzing other possible reasons. Scientific reasoning is inductive in nature.
2. **Deductive Reasoning:** The deductive reasoning begins with general solution and then draws specific solution.
3. **Analogy:** Analogy helps us in identifying and visualizing the salient attributes of an object.

Question 5. Are judgement and decision-making interrelated processes? Explain.

Answer: Judgement and decision-making are interrelated processes.

- In decision-making the problem before us is to choose among alternatives by evaluating the cost and benefit associated with each alternative. For example, when you have the option to choose between psychology and economics your decision will be based on future prospects.
- Decision making differs from other type or problem solving. In decision-making we already know the various solutions of choices.

- Judgements are not decisions although they make yield information necessary for decision.

Question 6. Why is divergent thinking important in creative thinking process?

Answer: Divergent thinking^ is important in creative thinking process. It's abilities facilitate generation of a variety of ideas which may not seem to be related.
Fluency, flexibility, originality and elaboration are the abilities of divergent thinking.

1. **Fluency :** produces many ideas for a given task or a problem. The more ideas a person produces, the higher his fluency ability.
2. **Flexibility:** indicates variety in thinking. It may be thinking of different uses of an object, or different interpretation of a picture, story or different ways of solving a problem
3. **Originality :** ability to produce ideas that are rare or unusual by seeing new relationship, combining old ideas with new ones, looking at things from different prospective.
4. **Elaboration :** ability that enables a person to go into details and workout implications of new ideas.
    - Divergent thinking ability facilitate generations of a variety of ideas which may not seem to be related.
    - Divergent thinking is essential in generating a wide range of ideas. Convergent thinking is important to identify the most useful or appropriate idea.

Question 7. What are the various barriers to creative thinking?

Answer: Barriers to creative thinking can be characterized as habitual, perceptual, motivational, emotional and cultural.

1. The tendency to be **overpowered by habits** can be detrimental to creative expression as it becomes difficult to think in novel ways.

2. **Motivational and emotional barriers** show that creativity is more than just a cognitive process. Lack of motivation, fear of failure, fear of rejection, poor self concept and negativism may hamper creative thinking.
3. **Cultural barriers** are related to excessive adherence to tradition, expectations, conformity, pressures and stereo types. It arises due to the fear of being different, mediocrity, social pressure, over-dependence, personal security and tendency to maintain the things as it is.
   Strategies to overcome the barriers of creative thinking.

There are certain attitudes, dispositions, and skills, which facilitate creative thinking.
Here are some strategies to help you enhance your creative thinking abilities and skills:

- Cultivate the habit of wider reading, **exposure to a variety of information**, and develop the art of asking questions, pondering over the mysteries of situations and objects.
- Try deliberately **to look for multiple angles** of a task and situation to increase flexibility in your thinking.
- Obsbom's **Brainstorming** technique can be used to increase fluency and flexibility of ideas to open-ended situations. This helps in increasing the fluency of ideas and piling up alternatives. Brainstorming can be practiced by playing brainstorming games with family members and friends keeping its principles in mind.
- Originality can be developed by practicing fluency, flexibility, and habit of associative thinking, exploring linkages, and fusing distinct or remote ideas.
- Indulgence in activities, which require use of imagi-nation and original thinking rather than routine work according to the interest and hobbies.
- Generate a number of possible ideas or solutions, then select the best from among them.
- Think of what solutions someone else may offer for the problems.

- Give your ideas the chance to incubate. Allowing time for incubation between production of ideas and the stage of evaluation of ideas may bring in the 'Aha!' experience.
- Sometimes ideas cluster like branches of a tree. It is useful to diagram your thinking so that you can follow each possible branch to its completion.
- Resist the temptation for immediate reward and success and cope with the frustration and failure. Encourage self-evaluation. Develop independent thinking in making judgments.
- Visualize cause and consequence and think ahead, predicating things that have never happened, like, suppose the time starts moving backwards, what would happen? If we had no zero?, etc.
- Be self-confident and positive.

Question 8. How can creative thinking be enhanced ?

Answer: Strategies to enhance memory:

1. **Originality:** Originality can be developed by practicing fluency, flexibility, habit of associative thinking, exploring linkages, and fusing distinct or remote idea.
2. **Use of Imagination:** Engaging more frequently in activities which require use of imagination and original thinking rather than routine work according to interest and hobbies.
3. **Not to accept initial ideas:** Never accepting the first ideas or solution. Many ideas die because we reject them thinking that the idea might be a silly idea i.e. we have to first generate a number of possible ideas or solutions, then select the best from among them.
4. **Getting feedback:** Getting a feedback on the solutions we decide one from others who are less personally involved in the task.
5. **Chance to Incubate :** Giving ideas the chance to incubate. Allowing time for incubation between production of ideas and the stage of evaluation of ideas, may bring in the 'Aha!' experience.

6. **Diagram thinking:** Sometimes ideas cluster like branches of a tree. It is useful to diagram our thinking so that we can follow each possible branch to its completion.
7. **Developing independent thinking:** Developing independent thinking in making judgements, figuring out things without any help or resources.
8. **Self confident :** To be self-confident and positive. Never undermine to your creative potential to experience the joy of your creation.

Question 9. Does thinking take place without language ? Discuss.

Answer:

- Thinking is a silent speech
- It cannot take place without language.
- Benjamin Lee Whorf was of the view that language determines the contents of thought. This view is known as **linguistic relativity hypothesis.** In its strong version, this hypothesis holds what and how individuals can possible think is determined by the language and linguistic categories they use (linguistic determinism).
- Experimental evidence, maintains that it is possible to have the same level or quality of thoughts in all languages depending upon the availability of linguistic categories and structures.
- Some thoughts may be easier in one language compared to another.

Question 10. How is language acquired in human beings?
Answer: To achieve linguistic competence, children must master the four sub-systems or language :

- Phonology – the ability to understand and produce speech sounds
- Semantics – the ability to understand words and the different combinations of words

- Grammar – the ability to understand the rules by which words are arranged into sentences and the rules by which words can indicate tense and gender
- Pragmatics – the ability to understand the rules of effective communication such as turn-taking, initiating and ending conversations and so on.

There are two contrasting views on how language is acquired. Some suggest that language acquisition is primarily biologically determined. This is typical nativity position in nature-nurture debate. Other position is the environmentalist position which views learning as the basis of language acquisition.

Language development for behaviourists like B.F. Skinner follow the learning principles such as association, imitation and reinforcement. They explain it in terms of operant conditioning.

Regional differences in pronunciation and phrasing illustrate how different patterns are reinforced in different areas.

- The nativist view supported by Noam Chomsky argues that human being's extra ordinary capacity to learn and use language is based on certain innate mechanisms.
- Chomsky suggested that children are born with powerful language acquisition, device, LAD, which represents a knowledge of universal grammar.
- Children throughout the world seem to have a critical period that is form infancy to puberty where learning must occur if it is to occur successfully for learning language.
  Most psychologists accept that both nature and nurture are important in language acquisition.