INTRODUCTION

Man has entered into the 21st century and presently passing through a transitional state. Life is becoming fast with the increasing impact of the science and technology. Though man has conquered time and space to a greater extent with the present level of scientific advancement, yet there is great threat to his existence. The Indian society is becoming increasingly materialistic. Emotional pressure is increasing day by day especially at adolescence stage. Stress is more subtle, more tangible and more pervasive. Unrest and frustration are occurring in almost all spheres of their life. Parents have no time to spend and guide their children. Adolescents are frequently troubled with their daily problem because they don’t have the capacity and training to solve their problems and the educational system provides no directions in this field.

In modern society, it is difficult to escape from stress. Explosion of information, economic progress and competition, globalization and cultural change and changing pattern of relationships are all the contributing factors. Stress and tension in turn give rise to psychosomatic diseases like hypertension, insomnia, high blood pressure etc. Man confronts stressful situations time and again and is caught in its vicious circle. Man today has achieved all the comforts and luxuries of the mundane world at the cost of peace of mind. Stress can influence our physical and psychological well being or performance in many tasks and even the ultimate course of our career. Stress is a major problem in our society. About 75% of bodily disease is said to be stress related. At times man feels helpless to respond to the speed and needs of the changing time at a very high rate. The outcome is stress and anxiety. Due to over stress there is a possibility of nervous breakdown and high level of emotional instability

As viewed by Ross (2010) stress is the curse of living in modern times. Everyone suffers from stress and it takes a heavy toll on bodies,
emotions and minds. Feeling stressed out, worn out by fatigue or just simply having a miserable day, the best thing to do is relax.

### 1.1 Stress

#### 1.1.1 Concept and Definitions of Stress

The concept of stress is as old as mankind. Its nature goes on changing from time to time. With the advent of modern era, the concept of stress underwent a drastic change. Scientific and technological progress all over the world has made it all the more critical. The concept of stress may differ from a person to person depending on his/her thinking, attitude, thoughts, beliefs, tolerance, etc.

Stress is derived from the Latin word ‘stringere’, meaning to draw tight, and was used in 17th century to describe hardships. During the late 18 century, stress denoted “force, pressure, strain or strong effort”, referring primarily to an individual or to an individual’s organs or mental powers *(Hinkle, 1973)*.

The term ‘stress’ has a different meaning for researchers in various disciplines. In the biological literature, it is used in relation to single organism, populations of organisms, and eco-systems. Biologists refer to things such as heat, cold and inadequate food supply as being sources of stress. Human biologists add to this microbial infection and taking toxic substances. Social scientists, for this part, are more concerned about people’s interaction with their environment and the resulting emotional disturbances that can sometimes accompany it *(Hinkle, 1987)*.

According to *Selye (1956)*, “Stress is the body’s reaction and can be positive as well negative; for most others, it is physical and mental factors that cause the body to react and it is generally considered negative”.

*Cofer and Appley (1964)* define stress as a force which, acting on a body, produces strain or deformation.
McGrath (1970) defines stress as the anticipation ability to perceived demand accompanied by anticipation of negative consequences for inadequate response. According to him, four events must be considered in studying stress:

a) The physical and social environment that places some demand on the individual.

b) The individual’s perception of the demand and the decision how to respond it.

c) The organism’s actual response to the perceived demand.

d) The consequences resulting from the responses.

Stress can also be defined as a failure to adapt. It occurs when the environment or internal demands exceeds an individual resource to adapt (Lazarus & Launier, 1978).

A stress is any force that puts a psychological or physical function beyond its range of stability, producing a strain within the individual. Knowledge that stress is likely to occur constitutes a threat to the individual. A threat can cause a strain because of what it signifies to the person (Cummings & Cooper, 1979).

According to Spielberg (1979), “The term stress is used to refer to a complex psycho-biological process that consists of three major elements. The process is initiated by a situation or stimulus that is potentially harmful or dangerous stressor. If a stressor is interpreted as dangerous or threatening, an anxiety reaction will be elicited”.

Mandler (1982) defines stress as an emergency signaling interruption. The basic premise is that autonomic activity results whenever some organized action or thought process is interrupted. The term interruption is used in the sense that any event, whether external or internal to the individual, prevents completion of some action, thought sequences, or plan and is considered to be interrupted. Interruption can occur in the perceptual,
cognitive, behavioral, or problem-solving domains. The consequences of the interruption will always be autonomic activity and will be interpreted emotionally in any number of ways ranging from the most joyful to the most noxious.

According to Sahni (1982), “Stress is wear and tear of life caused by an excessive demand on the body’s system to cope. The pricks and pressures of daily life ranging from bodily adjustment to sudden temperature or humidity or changes in weather, an emotionally charged argument with spouse or boss, all contribute to stress. Stress is any stimulant from environment, which demands some extra adjustment, effort or survival effort from body”.

According to Selye (1982), “An important aspect of stress is that a wide variety of dissimilar situations are capable of producing the stress response such as fatigue, effort, pain, fear, and even success. This has led to several definitions of stress, each of which highlights different aspects of stress”.

Dienstbier (1989) uses the term stress to refer to transactions that lead only to negative emotions and he uses the term challenge to describe a transaction that could lead both to positive and negative emotions.

Schlaadt and Shannon (1990) recognize stress as the “excitement resulting in elevated body process.” The reaction of body to stress is mainly controlled by the sympathetic and parasympathetic components of autonomic nervous system. The sympathetic part gears up an organism in preparation to meet a threat or crises and is recognized as “flight or fight” response by psychologists.

According to Pestonjee (1992), “Stress is mainly concerned with persons’ recent traumatic events and the meaning he/she may attach to such events. Thus, stress is that stimulus that imposes strain and can’t be easily accommodated by the body and results in impaired health and behavior”.

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Stress may be an internal state which can be caused by physical demands on the body such as disease, exercise, extremes of temperature, professional hazards and so on by environmental and social situations which are evaluated as potentially harmful, uncontrollable or exceeding our resources for coping (Morgan et al., 1993).

Franken (1994) views stress as a set of neurological and physiological reactions that serves an adaptive function.

Baron (1996) views stress as the process that occurs in response to event that disrupts or threatens to disrupt our physical or psychological functioning.

Beckwith (1996) defines stress as the demand including the appraisal of threat placed on an organism rather than the response of the organism to those demands.

Hollar (1996) perceives stress as an agitated physiological state in which the electrical transmission of information along neurons is heightened to the pain that the nervous system may collapse and/or bodily functions may perform poorly. Most individuals pursue displacement activities to relieve stress, unfortunately these efforts are halfway measures, which often make the stressful situation worse. Stress is a heightened electrical activity in the neurons of the central and peripheral nervous system such that various bodily measures begin to function improperly or feel altogether.

Sharma et al. (1996) state in simple terms that stress is a reaction response to any kind of change. It is the physical and emotional response to the situation which is perceived as novel, frightening, confusing, exiting or tiring. It not only gets precipitated by external demands but can also be generated from within by our hopes, fears, expectations and beliefs. It acts like a signal for the mind and body to get prepared for any eventuality.

Ellis (1999) defines stress as a feeling of tension that is both emotional and physical. It can occur in specific situation. Different people perceive different situations as stressful. Stress management refers to the
effort to control and reduce the tension that occurs with a situation that is considered difficult or unimaginable.

*McEwen (1999)* defines stress as a threat, real or implied, to the psychological or physiological integrity of an individual.

### 1.1.2 Process of Stress

One of the first scientific attempts to explain the process of stress was made by *Selye (1946)* who described three stages an individual experiences in stressful situations:

a) Alarm reaction in which an initial phase of lowered resistance is followed by countered shock. During which an individual’s defense mechanism becomes active.

b) Resistance, the stage of maximum adaptation and ideally successful return of equilibrium for the individual. If however, the stress continues or the defense mechanism does not work one will move onto a third stage i.e. exhaustion.

c) Exhaustion means when adaptive mechanism collapses.

*Cummings and Cooper (1979)* have designed and explained way of understanding the process of stress that can be put in the following points:

a) Individual’s, for the most part, try to keep their thoughts, emotions and relationships in a “steady state”.

b) Each factor of a person’s emotional and physical state has a “range of stability” in which that person feels comfortable. On the other hand, when forces disrupt one of these factors beyond the range of stability, the individual must act or cope to restore a feeling of comfort.

c) An individual’s behavior aimed at maintaining a steady state makes up his or her “adjustment process” or coping strategies.
1.1.3 Causative Factors of Stress

There are many factors causing stress. Desai (1999) classified stressors into following categories:

a) **Physiological causes**: These include genetic and congenital factors, life experiences, biological rhythms, sleep, posture, diet, fatigue, muscular tension and disease of adaptation.

b) **Psychological causes**: These include nine elements: Perception, emotional situation, experience, sensation, decision, memory, motivation, cognition and appraisal.

c) **Environmental causes**: These causes emerge due to environment like ambient environment, physical events, psychological subsystems, social events and biotic events.

1.1.4 Types of Stress


a) **Eustress**: It is a type of short term stress that provides immediate strength. It arises at points of increased activity. It is a positive stress that arises when motivation and inspiration are needed. A gymnast experiences eustress before a competition.

b) **Distress**: It is a negative stress brought about by constant readjustment or alterations in routine. It creates feelings of discomfort and unfamiliarity. There are two types of distress- acute and chronic. Acute stress is an intense stress that arises and disappears quickly. Chronic stress is a prolonged stress that exists for weeks, months or even years. Someone who is constantly relocating or changing jobs may experience this stress.

c) **Hyper-stress**: It occurs when an individual is pushed beyond what he or she can handle. It results from being over loaded or over worked. When someone is hyper stressed, even little things can trigger a small emotional response.
d) **Hypo-stress**: It is opposite of hyper stress. It occurs when an individual is bored or unchallenged. People who experience hypo stress are often restless and uninspired. A factory worker who performs repetitive task might experience hypo stress.

*Bisht (1987)* has given 13 types of stresses in Stress Battery which are: existential stress, achievement stress, academic stress, self concept stress, self actualization stress, physical stress, social stress, role stress, institutional stress, family stress, financial stress, vocation stress and superstition stress. These stress types are having all the four component of stress i.e. frustration, conflict, pressure and anxiety in them.

*Eysenck (1996)* also divided stressors into three broad categories:

a) **Stressful life events**: This situation occurs mainly as a result of our relationship with other people.

b) **Environmental stressors**: They are noise, vibration, electric shock and heat.

c) **Technological threat**: This type of threat is posed by nuclear power advanced sophisticated technology and sick building syndrome.

*American Psychological Association (2007)* identified 3 different types of stress:

a) **Acute stress**: This is the most common type of stress that affects people on a regular basis. It is usually caused by pressures or demands of life, real or imagined. Acute stress has short-term effects and does not cause extensive damage to people who experience it. Common symptoms include anxiety, irritability and anger that specifically target human emotions. In addition, it causes muscular problems like jaw pain, extreme headaches and muscular tensions that prohibit a person from functioning comfortably. Other symptoms include heartburn, diarrhea and constipation.
b) **Periodic acute stress:** This is the type of stress being experienced frequently. Experts have deeply associated episodic or periodic acute stress to managers, lawyers, business owners, etc. They are usually short-tempered, tense, anxious and irritable. They generally make their office an extremely stressful place. Symptoms of this type of stress include hyper-tension, heart disease, tension headaches, chest pain and migraines. People who are suffering from this kind of stress should seek immediate professional help.

c) **Chronic stress:** This is what experts call destructive stress because it destroys minds, bodies and lives. This is commonly seen in people who have dysfunctional families, suffer from poverty or are generally unhappy about their marriage and job. Most people suffering from chronic stress commit suicide or die from heart attack and stroke. Chronic stress leads to extreme depression and requires extensive medical and behavioral treatment as well as stress management. Symptoms include frequent conflicts with employers, friends, family members and co-workers, frequent change in jobs, inability to socialize, and workplace and domestic violence.

### 1.2 Academic Stress

According to *Lazarus (1961)*, “Stress is the internal response of individual to pressure when the pressure experienced is greater than normal abilities. In the school situation, this pressure may be accountable for individual’s success and failures. Hence, this kind of stress, that is, academic stress is an important factor accounting for low academic achievement.

The factors like test anxiety, poor study skills, excessive academic load, profession and classroom environments were reported to be the cause of academic stress which in turn form a major part of general stress in
adolescent students (Archer & Lamnin, 1985; Kagan & Squires, 1984). School related problems which were specified by the participants were: teachers not liking them, fear of failing, not getting homework done and failing to meet parental expectations”.

Peaceful and stress free life for today’s students appears to be a mirage. They are caught in a dynamic technological whirlpool and seem to be precariously poised at the brink of disaster (Bector, 1995).

When stress is perceived negatively or becomes excessive, students experience physical and psychological impairment (Murphy & Archer, 1996).

Stressors affecting students can be categorized as academic, financial, time or health related and self-imposed (Goodman, 1993; LeRoy, 1988). Academic stressors include the student's perception of the extensive knowledge base required and the perception of an inadequate time to develop it (Carveth et al., 1996). A disturbing trend in college student health has increased student’s stress nationwide (Sax, 1997). Students report experiencing academic stress at predictable times in each semester with the greatest sources of academic stress resulting from taking and studying for exams, grade competition, and the large amount of content to master in a small amount of time (Abouserie, 1994; Archer & Lamnin, 1985; Britton & Tesser, 1991; Kohn & Frazer, 1986).

Stress within the school environment may exert specific influences on children's academic-related beliefs, self-perceptions, and goals, and, consequently, on emotional well-being at school. As reviewed by Roeser and Eccles (2000), classroom level and school level stressors involving instructional practices, emotional climate, teachers' goals and behavior influence children's subjective perceptions of school, which then determine academic and emotional adjustment.
1.3 Emotional Stability

1.3.1 Concept and Definition of Emotion

The word emotion is derived from the Latin word ‘emovere’ which means ‘to stir up’, ‘to agitate’, ‘to excite’, ‘to move out’. So emotion is stirred up or disturbed state of mind when our feelings become intense and exited, they become emotion.

From one point of view emotions consist of stirred up responses of certain parts of the body- a gasp, a pondering heart, dilated eyes. From another point of view, emotions are stirred up states of consciousness, massive turbulent feelings and impulses.

Emotion is complex, and the term has no single universally accepted definition. Emotions create a response in the mind that arises spontaneously, rather than through conscious effort. Emotions are physical expressions, often involuntary, related to feelings, perceptions or beliefs about elements, objects or relations between them, in reality or in the imagination.

According to Young (1943), “An emotion is a disturbed state of organism: an emotion includes visceral changes due to increased activity of autonomic nervous system and an emotion originates within psychological situation.”

According to Gellhorn and Loofbourrow (1963), “Emotions are more than arousal reactions. They show widely different expressions and psychic contests which are experienced subjectively. It is therefore assumed that hypothalamic-cortical discharges show a great variety of patterns which continue to the wealth of subjective emotional experience. The balance between anterior and exterior hypothalamus or as we expressed it, ‘the tuning’ of the hypothalamus undergoes wide changes in different emotional states. This determines the effect on the cerebral cortex and thus plays an important role in determining the variety of emotional experiences.”

Wukmir (1967) states that emotion is an immediate answer of an organism that informs about the degree of favourability of the perceived environment.
situation. If it seems to favor its survival the living being experiences an emotion (happiness, satisfaction, desire, peace, etc.) and it experiences a negative emotion (sadness, sorrow, anguish etc.) when the situation seems to be unfavourable for survival. All living beings have their mechanism of emotion which guides them all the time acting as a compass, to find favorable situations to survive and to move away from those unfavorable for survival.

According to Kagan (1984), “Emotion is a super ordinate term representing the varied relations among external incentives, thought and detected changes in feeling states, as weather is a super ordinate term for relations among wind velocity, humidity, temperature barometric pressure and forms of precipitation. We don’t ask what weather means but determine, instead the relations among the measurable phenomena and name the discrete coherences. Similarly, it may not be useful to debate the meaning of emotion”.

Izard and Malatesta (1987) define emotion as “a particular set of neural processes that lead to a specific expression and a corresponding specific feeling”.

Campos et al. (1989) consider emotions are to be processes of establishing, maintaining or disrupting the relation between the organism and the environment on matters of significance to the person.

Watson and Clarke (1994) define emotions as distinct, integrated psycho-physiological response systems. They suggest three systems: expression (facial), a pattern of autonomic changes and distinct subjective feeling state. For example, the emotion fear has a fearful facial expression, plus autonomic activity such as sweating and raised heart rate, plus self-reports of feeling nervous or frightened.

According to McEwan (1995), “Emotions are the product of an individual’s own processing of occurrences on the basis of his own prior history and biology and an emotional response activities and neuro-
endocrine effectors systems and leads to a variety of short and long term consequences that may or may not result in disease.”

An emotion is composed of (1) neuro-chemical process, (2) expressive behavior, and (3) a subjective experience or feeling state. The neuro chemical components variously involve process as in the somatic nervous system that activate and regulate emotion. There are processes in autonomic nervous system that sustain emotion over time as well as the processes in the reticular activating system that amplify and attenuate emotions (Izard, 1977; Izard & Harris, 1995).

Keltner and Haidt (1999) portray emotions as dynamic processes that mediate the individual’s relation to a continually changing social environment.

Gazzaniga and Heatherton (2003) states that emotions are fundamental part of the human experience. They warn of danger, create bonds between people and bring joy to life. However, they can also cause problems. They further stated that for a psychological scientist, emotion refers to feelings that involve subjective evaluation, psychological processes and cognitive beliefs. Emotions are immediate responses to environmental events such as being cut off in traffic or given a nice gift.

1.3.2 Concept of Emotional Stability

Webster Dictionary (1913) term stability as the state or quality of being stable, or firm; steadiness; stableness; firmness; strength to stand without being moved or overthrown.

The American Heritage Dictionary of the English Language (2007) defines stability as the state or quality of being stable, especially:

- Resistance to change, deterioration, or displacement.
- Constancy of character or purpose; steadfastness.
- Reliability, dependability.
Emotional stability is the opposite of emotional reactivity, which is the tendency to experience negative feelings. Those who score low on emotional stability may experience primarily one specific negative feeling such as anxiety, anger, or depression, but are likely to experience several of these emotions. People low in emotional stability are emotionally reactive. They respond emotionally to events that would not affect most people, and their reactions tend to be more intense than normal. They are more likely to interpret ordinary situations as threatening, and minor frustrations as hopelessly difficult. Their negative emotional reactions tend to persist for unusually long periods of time, which means they are often in a bad mood. These problems in emotional regulation can diminish one’s ability to think clearly, make decisions, and cope effectively with stress.

At the other end of the scale, individuals who score high in emotional stability are less easily upset and are less emotionally reactive. They tend to be calm, emotionally stable and free from persistent negative feelings.

Emotional stability involves a person’s ability to remain stable and balanced. A person who is high in emotional stability is even tempered, calm and somewhat resistant to stress. A person who is low in emotional stability tends to be moody, depressed and very susceptible to stress.

The emotionally stable regardless of his age, is one (Crow and Crow, 1962) who has the ability to overcome tensions, to disregard certain emotion stimulators and to view him objectively, as he evaluates his assets and liability and strives towards an improved integration of his thoughts and his covert behavior. So, the mature individual is set to have control over his emotions (Young, 1966).

According to Hurlock (1972), “When in addition to achieving emotional tolerance by learning to access the situation, that gives rise to
emotion, one also learns to control his impulses, to act out feeling, he will achieve emotional maturity.”

According to Good (1973), “Emotional maturity is the emotional pattern of an adult who has progressed through inferior emotional stages, characteristics of infancy, childhood and adolescence and is now fitted to deal successfully with reality and participate in adult love relationship without undue emotional strain”.

Singh and Bhargava (1990) state that emotional maturity is not one which necessarily has resolved all conditions, that arouse anxiety and hostility, but it is continually involved in a struggle to gain healthy integration of feelings, thinking and action.

Goldberg (1992) states that negative end of emotional stability is described by such adjectives as anxious, irritable, nervous, and highly strung.

According to Reber (1995), “Emotional stability is a state of personality in which one is emotionally mature, whose emotional reactions are appropriate for the particular situation and are consistent from one set of circumstances to another.”

The findings indicate that emotional stability is (a) an indicator of psychological adjustment (Lippa, 1995), (b) unrelated to gender (Lippa, 1995) and (c) culturally universal (Kohnstamm et al. 1998).

In layman’s language emotional balance, emotional maturity, emotional control and emotional stability are thought to be same, but in fact they are not.

**Emotional balance:** It emphasizes the value of learning to cope with both pleasant and unpleasant emotions. One can attain emotional maturity without having attained emotional balance although the vice-versa is not true. An emotionally balanced person will necessarily be
emotionally mature person. Emotional balance is quality of an adult and not of a child.

**Emotional maturity:** Thus emotional maturity is a relative term. It is directly related to age and stage of development of an individual. It is positive in nature. Most of the people control their emotions in many situations but it does not mean that they are emotionally mature. It involves the internal control of emotions rather than the external control. In brief a person can be called emotionally mature in appropriate degree with reasonable control.

**Emotional control:** In fact some of the people may not express their emotions for fear of consequences. Emotional control means checking of emotions or inhibiting them from expression, whereas emotional maturity means behaving in most acceptable manner without inhibiting the emotions.

**Emotional stability:** Emotional stability as has been considered to be an ingredient of personality which is essential both in psychological as well as moral sense of the term. No ideal adjustment in the environment is possible unless people are made to know how they should control their emotions.

### 1.3.3 Theories of Emotion

Different causes of emotions have been described by various psychologists through theories of emotions given below (Fig. 1)

a) **James-Lange theory of emotion**

*James (1890)* argued that an emotion-related stimulus gives rise to certain physiological changes. The individual becomes aware of these changes and then recognizes the emotion being experienced. Similar ideas were simultaneously developed by a Danish psychologist, Lange, and the theory is known as the James- Lange theory of emotion
**Fig. 1 Pictorial representation of three theories of emotion**

**James Lange theory**

Anger situation → Distinctive physiological state → Anger

Euphoric situation → Distinctive physiological state → Euphoria

The situation determines the physiological state and the physiological state completely determines the emotion.

**Cannon-bard theory**

Anger situation → Cognitive appraisal of anger → Physiological state of anger → Anger

Euphoric situation → Cognitive appraisal of euphoria → Physiological state of euphoria → Euphoria

The situation determines the cognitive state and the physiological state independently.

**Schachter-Singer Two-factor theory**

Anger situation → Cognitive appraisal of anger → Ambiguous Physiological arousal → Anger

Euphoric situation → Cognitive appraisal of euphoria → Ambiguous Physiological arousal → Euphoria

The situation determines the cognitive appraisal, which determines the emotion. The physiological arousal determines the intensity of emotions but not the type of emotion.

Source: Gazzaniga, M.S. and Heatherton, T.F. (2003). *Psychological Science, Mind, Brain and Behavior*

**b) Cannon-Bard theory**

*Cannon (1927)* noted that although humans are quick to experience emotions, the body is much slower, taking at least a second or two to respond. He also noted that many emotions produced similar visceral responses, making it too difficult for people to quickly determine which emotion was experienced.
emotion they were experiencing. For instance, anger, excitement, etc. all produced similar changes in heart rate and blood pressure. Cannon, along with Philip Bard, proposed instead that mind and body operate independently in experiencing emotions. According to Cannon-Bard theory, the information from an emotion producing stimulus is processed in sub cortical structures causing the experience of two separate things at roughly the same time, an emotional and physical reaction. When one sees a grizzly bear he simultaneously feels afraid, begins to sweat, and experiences a pondering heart and run, everything happens together

c) Schachter-Singer theory

_Schachter and Singer (1962)_ carried out an experiment that subsequently led to a third theory of emotions or the cognitive labeling theory of emotions _Le Francois, 1983_. The findings led Schachter and Singer to hypothesize that, when a person is physiologically aroused, he is likely to label the emotions that he experiences according to circumstances in the situation. This approach is sometimes called attribution theory of emotion.

_Martin and Osborne (1989)_ have described the causes of emotions as under:

a) Happiness, a pleasurable emotion that is caused by the presentation of rewards.

b) Anger, an unpleasant emotion is caused by withholding or withdrawal of rewards.

c) Anxiety, an unpleasant emotion that is caused by the presentation of aversive stimuli.

d) Emotional relief, a pleasant emotion that is caused by the withdrawal of aversive events.

e) Guilt, an emotion that is based on a combination of anxiety and happiness.
f) Pride, an emotion that is based on a combination of happiness and anger.
g) Sorrow, an emotion that is based on combination of anger, anxiety, emotional relief and happiness

1.3.4 Types of Emotion

Many theories distinguish between primary and secondary emotions. Basic or primary emotions include anger, fear, sadness, disgust and happiness, as well as surprise and contempt. Secondary emotions are blends of primary emotions, they include remorse, guilt, submission, and anticipation.

Oatley and Johnson-Laird (1987) suggested that there are five basic emotions as given below:

a) Happiness: Progress made on current goal
b) Anxiety: Self-preservation (goal) threatened
c) Sadness: Current goals not achievable
d) Anger: Current goal blocked
e) Disgust: A gustatory goal violated

One approach to understand the experience of emotions is the Circumflex model (Fig 2), in which two basic factors of emotions are arranged in a circle around the intersection of the core dimensions of affect (Russell, 1980). Russell and Barrett (1999) developed such model that posits that emotions can be mapped according to their degree of pleasantness or unpleasantness, and their activation which is the level of arousal or mobilization of energy. Thus “excited” is an affective state that includes pleasure and arousal, where as “depressed” described a state of low arousal and negative effect. Psychological scientists Watson et al. (1999), make a distinction between positive activation (pleasant effect) and negative activation (unpleasant effect), which can be plotted on a circumflex. They also propose that positive and negative effects are independent, such that people can experience both simultaneously.
1.4 Adolescence

The word adolescence is Latin in origin, derived from the verb *adolescere*, which means "to grow into adulthood." Adolescence is a time of moving from the immaturity of childhood into the maturity of adulthood. There is no single event or boundary line that demarcates the end of childhood or the beginning of adolescence.

Adolescence is a period of rapid physical, intellectual, emotional and social growth. It is a period of growing up. Physically the children become adult and the sex organs mature. There is an intellectual growth towards a more abstract and mature mode of thinking. Intelligence reaches its maximum. Emotionally, the adolescent grows independent of parents and prepares himself for entering into other relationships that are needed in marriage, in work and in the community. Sex consciousness develops and this influences the emotional as well as intellectual activities of the children.

The great importance of adolescence period has been clearly emphasized by philosophers, sociologists and psychologists. The problem of stress and instability becomes particularly acute during the late stage of adolescence because of heightened needs for self acceptance, personal identity, independence and social acceptance and also because of the formidable realities and responsibilities of adult life that suddenly start staring him in the face.

Clinical study on mentally healthy adolescents carried out by Masteron et.al. (1963) have brought to light the alarming fact that in the normal adolescent population the mentally ill and the doubtful cases out number the mentally healthy adolescents. This study conclude that some of them do not need hospitalization or even clinical assistance but most of them do need some kind of help, guidance and skillful handling. They need timely guidance for diversion of their minds towards a creative channel to save themselves from disaster of entering the dark world of drug addiction and frustration.

Further evidence that problems of adolescence are on rise come from longitudinal research indicating that rate of emotional and behavioral problems of adolescents have increased over the past ten years (Achenbach & Howell, 1993).

1.4.1 Concept of Adolescence

According to Hall (1904), “Adolescence itself is a period of rebellion; it corresponds to a time when the human race was in the stage of transition. It is a period of “storm and stress” for the individual. Since adolescence is frequently marked by continual shifts in direction and expression this is largely a time for general instability. It is generally in late adolescence that the individual finally reaches maturity just as civilization matured from its transitional stage”.

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According to Freud (1953), “At puberty, the beginning of adolescence both boys and girls show definite amount of stress. An important development of this period is the child growing independence from his parents. As a result of this independence, they go in search of new love objects outside the family”.

Erikson (1956) believes that during successful early adolescence, mature time perspective is developed; the young person acquires self-certainty as opposed to self-consciousness and self-doubt. He comes to experiment with different usually constructive roles rather than adopting a "negative identity" (such as delinquency). He actually anticipates achievement and achieves, rather than being "paralyzed" by feelings of inferiority or by an inadequate time perspective. In later adolescence, clear sexual identity, manhood or womanhood is established. The adolescent seeks leadership (someone to inspire him) and gradually develops a set of ideals (socially congruent and desirable, in the case of the successful adolescent).

According to Jersild (1957), “Adolescence is the span of years during which boys and girls move from childhood to adulthood mentally, emotionally, socially and physically”.

Jones and Jones (1957) define adolescence as the transitional period between puberty and adulthood.

Erikson (1968) may be credited with presenting a widely accepted concept of adolescence. He believes that major concern of this period is a ‘search for identity’.

McCandless (1970) states that adolescence is both a time of drastic change a part of continuous stream of human development. It is a bridge time of shifting from one stage to another.
According to Manning (1971), “Adolescence is a time of tremendous change and transition between childhood and adulthood. It has been regarded by psychologists as a crucial period in the life of an individual”.

Brooks-Gunn and Petersen (1984) state that beginning puberty is a major developmental milestone of adolescence considered by many as the developmental change that signals one’s transition into adolescence from childhood.

Russell and Deborah (2005) describe adolescence as a specifically turbulent as well as a dynamic period of one's life. It has been identified as a period in which young people develop abstract thinking abilities, become more aware of their sexuality, develop a clearer sense of psychological identity and increase their independence from parents.

1.4.2 Adolescence as Transition

Steinberg (1996) mentions the following transitions of adolescents:

a) Biological transition: The biological transition of adolescence or puberty is perhaps the most salient sign that adolescence has begun. Technically, puberty refers to the period during which an individual becomes capable of sexual reproduction. More broadly speaking, however, puberty is used as a collective term to refer to all the physical changes that occur in the growing girl or boy as the individual passes from childhood into adulthood.

The timing of physical maturation occurs around age 12 in girls. Although some youngsters start puberty when they are only eight or nine, others when they are well into their teens. The duration of puberty also varies greatly, eighteen months to six years in girls and two to five years in boys.

The physical changes of puberty are triggered by hormones, chemical substances in the body that act on specific organs and tissues. In boys a major change is the increased production of testosterone, a male sex hormone, while girls experience increased production of the female
hormone estrogen. In both sexes, a rise in growth hormone produces the adolescent growth spurt, the pronounced increase in height and weight that marks the first half of puberty.

b) **Cognitive transition:** A second element of the passage through adolescence is a cognitive transition. Compared to children, adolescents think in ways that are more advanced, more efficient, and generally more complex. During adolescence individuals become better able than children to think about what is possible, instead of limiting their thought to what is real and become better able to think about abstract ideas. For example, adolescents find it easier than children to comprehend the sorts of higher order, abstract logic inherent in puns, proverbs, metaphors, and analogies. The adolescent's greater facility with abstract thinking also permits the application of advanced reasoning and logical processes to social and ideological matters. This is clearly seen in the their increased ability and interest in thinking about interpersonal relationships, politics, philosophy, religion, and morality topics that involve such abstract concepts as friendship, faith, democracy, fairness, and honesty.

c) **Emotional transition:** Adolescence is also a period of emotional transition, marked by changes in the way individuals view themselves and in their capacity to function independently. As adolescents mature intellectually and undergo cognitive changes, they come to perceive themselves in more sophisticated and differentiated ways. Compared with children, who tend to describe themselves in relatively simple, concrete terms, adolescents are more likely to employ complex, abstract, and psychological self-characterizations. As individuals' self-conceptions become more abstract and as they become more able to see themselves in psychological terms, they become more interested in understanding their own personalities and why they behave the way they do.
For most adolescents, establishing a sense of autonomy or independence is as important a part of the emotional transition out of childhood as is establishing a sense of identity.

**d) Social Transition:** Accompanying the biological, cognitive and emotional transitions of adolescence are important changes in the adolescent's social relationships. Developmentalists have spent considerable time charting the changes that take place with friends and with family members as the individual moves through the adolescent years.

The importance of peers during early adolescence coincides with changes in individuals' needs for intimacy. As children begin to share secrets with their friends, loyalty and commitment develop. Another important social transition that take place in adolescence concerns the emergence of sexual and romantic relationships.

**1.4.3 Common Problems of Adolescents**

Generally speaking, most young people are able to negotiate the biological, cognitive, emotional and social transitions of adolescence successfully. Some adolescents, however, are at risk of developing certain problems, such as:

a) Eating disorders such as anorexia nervosa, bulimia or obesity  

b) Drug or alcohol use  

c) Depression or suicidal ideation  

d) Violent behavior  

e) Anxiety, stress or sleep disorders  

f) Unsafe sexual activities

*Walker (1985)*, conducted a more informal survey of 60 young people and found that the primary sources of tension and trouble for teens and their friends were: relationships with friends and family, the pressure of expectations from self and others, pressure at school from teachers, coaches,
grades and homework, financial pressures, and tragedy in the lives of family and friends (described as death, divorce, cancer).

The adolescent years are associated with numerous biological, psychological, and social changes. The family, school, peers, and other interpersonal domains can all be sources of stress (Compas, 1987). Stressful events encountered by adolescents have been shown to be related to psychological as well as physical problems (Johnson, 1986). It has been suggested that frequent minor stressors, such as daily hassles, may be better predictors of mental and physical difficulties than are major but more infrequent life events, such as the death of a loved one (Compas, 1987; DeLongis, et al., 1982; Kanner, et al. 1981).

Bell (1995), Dubois and Felner (1992) and Ganesan (1995) have found that stress made significant contribution in poor school performance of adolescents. One may wonder if mental stress can adversely affect the promising adolescents, having above average intelligence, resulting in their poor academic performance.

According to Hack (2001), children feel stress long before they grow up. Many children have to cope with family conflict, divorce of parents, constant changes in school, neighborhood and child care management, peer pressure, and sometimes even violence in their homes and communities. The impact of stressor depends on a child’s personality, maturity and style of coping. When children are feeling overtaxed and stressed they cry, become aggressive or become irritable, others may behave well but become nervous fearful or panicky.

Several causes are responsible to trigger stress during teenage. Some of these factors include demanding school schedules, changes in the body, the constant fear of being bullied amidst several others. Expecting too much from one self and taking the right career decision can also be an important cause of stress in teenagers. Learning disabilities, financial
problems in the family, discord between parents are some other less common causes of stress amidst teenagers (Walters, 2009).

Problem of stress and emotional instability becomes particularly acute during the late phase of adolescence because of heightened needs of self acceptance, personal identity, independence and social acceptance and also because of the formidable realities and responsibilities of adult life that suddenly start staring him in the face.

1.5 Preksha Meditation

The word Preksha has been derived from the root iksha, which means 'to see'. When the prefix ‘Pra is added, it becomes Pra+iksha=Preksha which means 'to perceive carefully and profoundly'. Here, 'seeing' does not mean external vision, but careful concentration on subtle consciousness by mental insight. Preksha Dhyan is the system of meditation engaging one's mind fully in the perception of subtle internal and innate phenomena of consciousness.

The term Preksha Dhyan (meditation) is usually defined as the concentration of thinking on a particular subject for a length of time. Now the mind is the instrument of 'thinking' as well as 'perception'. And, therefore, when it is linked with Preksha Dhyan it becomes 'concentration of perception and not of thought. While it is conceded that both thinking (conception) as well as seeing (perception) assists in ascertaining and knowing the truth, the latter is more potent than the former. In the tenets propounded by Bhagavan Mahavira 'perceive and know' is given more prominence than 'think, contemplate and know'. This is because perception is strictly concerned with the phenomena of the present, it is neither a memory of the past nor an imagination of the future, whatever is happening at the moment of perception must necessarily be a reality. The process of perception, therefore, excludes a mere 'appearance' (Mahaprajna,2003).
1.5.1 Concept of Preksha Meditation

Impartiality and equanimity are synonymous with Preksha. Preksha is impartial perception, where there is neither the emotion of attachment nor aversion, neither pleasure nor displeasure. Both these states of emotion are closely and carefully perceived but not experienced. And because both are perceived from close quarters, it is not difficult to reject both of them and assume a neutral position. Thus equanimity is essentially associated with Preksha (Mahaprajna, 2003).

According to Mahaprajna (2003), “Preksha meditation is a technique of meditation for attitudinal change, behavioural modification and integrated development of personality. It is based on the wisdom of ancient philosophy and has been formulated in terms of modern scientific concepts. We hope that the synthesis of the ancient wisdom and the modern scientific concept would help us in achieving the blissful aim of establishing amity, peace and happiness in the world by eradicating the bestial urges such as cruelty, retaliation and hatred”.

The main purpose of the practice of Preksha Dhyan is to purify the mental states. Mind is constantly choked by contaminating urges, emotions and passions. This hampers the flow of wisdom. The hurdles of uncleanness must first be removed. When the mind is cleansed peace of mind automatically surfaces. Balance of mind, equanimity and the state of well-being are also experienced simultaneously. Preksha Meditation has proved a panacea for transmutation of thoughts, developments of right emotions, positive thoughts and above all increasing the efficiency of mind and body (Mahaprajna, 2003).

1.5.2 Philosophical Bases of Preksha Meditation

“To see yourself, by yourself” is the main principle for awakening the spiritual consciousness. PM starts with perception of breathing, as breathing is a part of the essential activity of the body. It is the base of life too. After
that one should perceive vibration, sensation and internal phenomenon and events that are taking place into one's body. By continuous perception, one's mind becomes subtle and expert in perception of more and most subtle levels of one's existence. Gradually, one's mind becomes so smart that one becomes quite able to see even wave of emotion and disposition of passion before manifesting on the level of brain. A total picture of our vicious circle is seen in this process of perception. Perception is a strong tool for breaking down the strategy of imagination. When one perceives a thing with full concentration without blinking the eye then thoughts are stopped. Therefore, perception is more significant than conception.

The conscious mind is capable of performing two functions viz. thinking and perceiving—conception and perception. But it is incapable of being engaged in both functions simultaneously. One either thinks or perceives. Exclusive perception of a single object can thus become an efficient tool for steadying the ever-wandering mind. Suppose one concentrates on an external object, he feels that his mind has been controlled and his train of thoughts has stopped. Similarly, when one concentrates on internal phenomenon such as sensations, vibrations or even thoughts, one will realize that the mind has stopped its usual behavior of wandering and is fully engaged in perception alone.

In PM, perception always means experience bereft of the duality of like and dislike. When the experience is contaminated with pleasure or pain, like and dislike, perception loses its primary position and becomes secondary. Impartiality and equanimity have full affinity with Preksha. It is impartial perception, where there is neither the emotion of attachment nor aversion. Therefore it is essentially associated with mere seeing (Preksha).

The sense organ of sight merely watches an object, but does not produce pleasure or pain at all. The same applies to the pure perception. He, whose ‘perception’ and ‘knowledge’ are pure, does neither attract new karmic matter nor does he suffer from old accumulated karma.
Mahaprajna (2003) states that the purpose of Preksha Meditation is to ‘search the truth’ ‘to realize the self’ ‘to develop the non attachment’. The non-attachment is only the mean by which one can get success to realize the self. The self-actualization needs perception without like and dislike. Similarly non-attached perception results in self-realization. They are interconnected with each other.

1.5.3 Scientific Basis of Preksha Meditation

Under the impact of rapid changes in the environment the human organism is often disturbed psychologically. The most notable effect is development of anxiety and stress. Individuals who are anxious land into crisis and become the victim of tension and depression and further unanticipated problems related to stress. Wallace and Benson (1972) states that most important means is the practice of meditation. They found that relaxation response is an innate and integrated means of physiological changes opposite to the “fight or flight” response of meditation. Pestonjee (1992) pointed out yoga as analytical and it not only helps the individuals in understanding his own stress but also leads to find out the root cause.

Our glandular system consists of two types of glands- exocrine and endocrine, the latter being ductless. Their products (called hormones) flow directly into the bloodstream and are distributed by it. The complex of endocrine system includes pineal, pituitary, thyroids, para-thyroids, thymus, adrenals, gonads and pancreatic islets. They participate in every bodily function and have profound influence upon the mental states and tendencies, attitudes, emotions and behavioural patterns of every individual. The quality of our existence necessitates that there must be some built in mechanism through which our subtle spiritual self can exercise its authority and control the grosser elements of the physical body. This mechanism must translate the code of intangible and imperceptible forces of the psyche into a form of crude power which can function through the nerves and muscles of the
body. Such a mechanism is located in the endocrine glands. They are the inter-communicating transformers between the psychical and the physical cells. The known methods of intercommunication are electrical impulses of the nerve action and the chemical reaction of the hormones and neuro-hormones. The endocrine system is the seat of the impulses and emotions of an individual. Endocrine and the nervous systems are two very important systems of our body. Function of both these systems is to integrate the organism. Close collaboration between the two systems governs mental states, behaviour and habits. The functional interlocking between both qualify them to be regarded as constituting a single integrated system called neuro-endocrine system. It is this system which comprises the subconscious mind and profoundly influences psychological behaviour and tendencies of the conscious mind. It is, therefore, obvious that to cleanse the psyche by removing psychological distortions such as cruelty, retaliation, fear, etc. from our habits, we have to find means of transforming the nature of the chemical messengers i.e. the hormones (Mahaprajna, 2003).

Kishan Lal (2008) states Preksha Meditation on scientific basis provides constructive solutions to entire problems of life and saves a person from false retentions and sectarian dogmatic. There is no insistence for acceptances but it is a way only to know and perceive the self in Preksha Meditation and it is a practical process in which a person enters in application like a scientist. Whatever sect, traditions and process of worship a person believes or follows, he perceives the results of Preksha as his own experiences. Preksha process contains knowledge of truth gained by ancient philosophers along with the analysis of self-experiences, defined as ‘Preksha Meditation’ which anybody at any time can apply in practice and test its reality.

There is no importance of religious rituals in Preksha. A person can gain self experience by joining its practice. There is no mysticism and combination of amazing powers in its practice. In this a person can realize...
his mental, physical and internal strength by visualizing his own self. This is not accidental. Modern scientists have given a scientific shape to the practices of meditation with biological feed backs. The psychologists, doctors and other instrumental means have carried out experiments on the persons practicing Preksha Meditation and have compiled the results in laboratories. The outcome of these results show a clear indication that there is a chemical change in the body while meditating, Alpha waves are emitted from the mind. Normally Alpha waves are present in the mind when a person is in happily and peaceful mood. Therefore persons of all ages and specially the youngsters can purify their thoughts and mind by learning the process of Preksha Meditation and applying the same in their life.

Spiritual harmony which is today's earnest need of the nation can easily be gained by accepting Preksha Meditation as part and parcel of education as science of life to be taught to mankind for better personality, better family, better society and ultimately a better nation.

1.5.4 Components of Preksha Meditation

It is an uncomplicated and easy to learn meditation. According to Mahaprajana (2003), Preksha meditation comprises the following:

a. Kayotsarga (Total Relaxation)
b. Antaryatra (Internal Trip)
c. Svasa-Preksha (Perception of Breath)
d. Sarira-Preksha (Perception of body)
e. Chaitanya Kendra Preksha (Perception of Psychic Centers)
f. Lesya-Preksha Dhyan (Perception of Psychic Spectrum)
g. Bhavana (Counter-vibrations)
h. AnuPreksha (Contemplation)

a. **Kayotsarga:** It is an essential pre-requisite for all type of meditational practice. This can be attained by the release of tensions by relaxation. Every muscle in each part of body is persuaded to relax by auto
suggestion. When the whole body has become relaxed, there is an acute and actual perception of rest and relaxation, which is no longer auto-suggestion, but is real experience. Thus kayotsarga is not only deep relaxation but self-awareness and actual contact with subconscious mind.

b) **Antaryatra**: In the practice of Antaryatra the conscious mind travels from Shakti-kendra to Jnana-Kendra (centre of knowledge, top of the head) via the spinal cord. This internal trip of conscious mind is repeated several times and results in an increased flow of the vital energy (prana-sakti) upwards. Repeated practice of this process assists in better generation of nervous energy necessary for further meditational practice.

c) **Svasa –Preksha**: Complete awareness of breathing and nothing else but breathing is the basis of Svasa-Preksha. Attention can be kept focused on a single point in the respiratory track, e. g. nostrils or it can travel the entire track during inhalation as well as exhalation. Various facets of breathing, such as movement of diaphragm, rate of breathing and depth of breathing can conveniently become the object of Svasa-Preksha. Svasa-Preksha can be practiced in two ways: dirgha svasa and samavrtti svasa.

d) **Sarira-Preksha**: The process of Sarira – Preksha is centripetal, i. e. from outside to inside, thus reversing one’s usual direction of the flow of consciousness which is from inside to outside. This is concentrated perception of the activities of the different parts and the organs of the body. It aims at the development of totally impartial perception of pleasure and pain.

e) **Chaitanya Kendra Preksha**: Chaitanya Kendra Preksha is an exercise in which one concentrates on the various psychic centers in the body. The psychic centers are the key locations in the body that receive both the positive and negative energy from the universe and
redistribute it through the human system. Focused flow of energy through any specific center intensifies the particular desired behavior.

Thirteen centers of *Chaitanya Kendra Preksha* are:

1. *Shakti Kendra* (Center of Energy) is situated at the lower end of the spinal code.
2. *Swasthya Kendra* (Center of Health) is situated at the two inches below of the navel.
3. *Taijas Kendra* (Center of Bio-electricity) is situated at the navel.
4. *Anand Kendra* (Center of Bliss) is situated on the middle of the chest, near the heart.
5. *Vishuddhi Kendra* (Center of Purity) is situated on the middle of the throat.
6. *Brahma Kendra* (Center of Celibacy) is situated at the tip of the tongue.
7. *Prana Kendra* (Center of Vitality) is situated at the tip of the nose.
8. *Chakshus Kendra* (Center of Vision) is situated inside of both the eyes.
9. *Apramad Kendra* (Center of Vigilance) is situated inside of both the ears.
10. *Darshan Kendra* (Center of Intuition) is situated between both the eye-brows.
11. *Jyoti Kendra* (Center of Enlightenment) is situated on the middle of the forehead.
12. *Shanti Kendra* (Center of Peace) is situated on the front portion of the head.
13. *Gyana Kendra* (Center of Knowledge) is situated on the top of the head.
f) **Leshya Preksha Dhyan**: *Leshya Preksha Dhyan* takes the *Chaitanya Kendra Preksha* exercise further by specifying a color to visualize on the chosen psychic center. As steadiness of meditation increases, visualization of colors intensifies. Today scientific evidence confirms that long exposure to specific colors has an influence on a person's emotions and personality. *Leshya Preksha Dhyan* results in purification of the aura.

g) **Bhavna**: The *modus-operandi* of *bhavna* is to generate counter-vibrations. Thus practice of forbearance, humility, honesty and contentment generates vibrations which countermand the impulses of cruelty, pride, deceit and greed respectively.

h) **AnuPreksha**: *AnuPreksha* is revising and thinking about what was concentrated upon and felt during meditation and analyzing it after the exercise. It is a practice of deep contemplation and understanding. The exercise is practiced for two purposes: to contemplate on that which is eternal, true and real and to bring about attitudinal changes through auto-suggestion. This technique can be used for reinforcement of positive qualities or reversing negative traits.

### 1.5.5 Benefits of Preksha Meditation

*Mahaprajna* (2003) states that *Preksha* Meditation contributes to increase physical, nervous as well as spiritual energies.

On physical level, it helps each bodily cell to revitalize itself; it facilitates digestion; it makes respiration more efficient and improves circulation and quality of blood.

On mental level, it proves to be an applied method to train the mind to concentrate; it offers a way to treat serious psychosomatic illnesses without drugs; it is an efficient tool for ending addictions and other bad habits; it reveals to one the mysteries of his mind by the realization and real
experience of the inner consciousness which includes the sub conscious and the unconscious.

On the emotional level, the strengthening of conscious reasoning controls reaction to the environmental conditions, situations and behaviors of others; harmonization of the functioning of nervous and endocrine system results in control and ultimate eradication of psychological distortions.

On spiritual level regulation and transformation of blood chemistry through proper synthesisization of neuro-endocrinal secretions, dispassionate internal vibrations leads one to attain the power to control the mind and to become free from the effects of external forces compelling one to loose equanimity.

In the present study, Kayotsarga, Jyoti Kendra Preksha (one of the techniques of Chaitanya Kendra Preksha) and Svasa Preksha have been taken from Preksha Meditation as techniques to reduce academic stress and enhance emotional stability of adolescents. Hence these are described in detail as under:

1.6 Kayotsarga

According to Mahaprajna (2003), Kayotsarga literally means 'abandonment of the body coupled with high degree of conscious awareness'. In practice, it is conscious suspension of all gross movements of the body resulting in relaxation of the skeletal muscles and drastic reduction of metabolic activities. This physical condition results in relieving mental tensions and is an essential pre-condition for meditational practice. It becomes, therefore, the first phase of Preksha Dhyan and must be practiced for a few minutes at the commencement of all types of techniques. Apart from this, Kayotsarga may be independently practiced daily for longer periods, if one learns and practices systematic relaxation everyday he would remain relaxed, calm and unperturbed in any situation. Physically it is more restful than sleep and is the most harmless and direct antidote to
psychosomatic maladies resulting from tension. Spiritually, in this process, the lifeless body is cast off, while the consciousness soars upwards freed from and outside its material shell.

1.6.1 Spiritual Basis of Kayotsarga

Mahaprajna (2001) states that two conditions are essential for the practice of Kayotsarga: (i) total cessation of voluntary movements that is relaxed condition of all skeletal muscles, and (ii) extremely slow rate of respiration as if the system has stopped working. The body is forgotten and cast away.

Kayotsarga means perfectly motionless state of the body. As long as there is any physical movement, meditation is out of question. Steadiness of mind requires steadiness of breath and the later is acquired only with physical immobility. Hence the most important element of the basic meditational prerequisite is the physical immobility. It removes mental tension, nervous tension and emotional tension. Kayotsarga is not merely relaxation of the muscles but actual experience and awareness of the real, non-material self, quite apart from the material non-self i.e. body. State of total relaxation is the state of ‘seeing’ and ‘knowing’ and leads to self-realization.

The practice of Kayotsarga develops forbearance. It means to bear with fortitude. Having stopped all voluntary movements and totally relaxed the muscles, the practitioner is now prepared to bear anything that happens. One who has not developed the virtue of forbearance cannot experience total experience. Forbearance, thus, is essential for self-awareness and it brings fearlessness. Relaxation is freedom from fear and self-awareness is casting off the material shell of the body without fear.

1.6.2 Scientific Basis of Kayotsarga

Practice of relaxation is the direct and harmless way of relaxing tension. Muscles contract with lightening speed when stimuli are applied to
the connecting nerve. Whenever one moves or is engaged in some physical activity, the current increases in response to the order from the brain, activating the electro magnets- the muscles contracts, the arm bends or the fist clenches. The number of minute motors set in motion is proportional to the intensity of the effort. This results in a colossal waste of nervous and muscular energy, because there is a constant leakage of current. Kayotsarg means perfectly motionless state of the body. As long as there is any physical movement, meditation is out of question. Steadiness of mind requires steadiness of breath and the latter is acquired only with physical immobility. Mental concentration follows physical motionless. Relaxation should be total i. e. the whole body is completely relaxed and free from tension. All skeletal muscles are relaxed and demagnetized. Muscular tension and fatigue result from stiffness.

Auto-suggestion is the basic principle of the technique of relaxation. In practice the body is mentally divided into small parts and each part is relaxed, in turn, by auto-suggestion until the entire body is free from tension. Maintenance of correct posture is an important key for keeping the muscles relaxed. The body is engaged in a constant struggle against gravity, and so habitual wrong postures would produce chronic strain in the muscles. In order to make Kayotsarga more successful silence should be maintained as it prevents colossal waste of energy.

1.6.3 Benefits of Kayotsarga

Many benefits on various levels accrue from this exercise which is given as below:

a) The turmoil due to restlessness vanishes and an acute sense of relaxation and relief from tension is experienced which improves mental state.

b) Rate of metabolism slows down and the need for oxygen is drastically reduced.
c) Control is established on the involuntary or smooth internal muscles.

d) There is an increase in the capacity for bearing environmental changes such as heat, cold etc.

e) When the turmoil of the body ceases and one achieves total motionless, there is an acute state of self-awareness which leads to self-realization.

f) Wisdom develops out of self-awareness. It constitutes discernment of material from non-material, body from soul, and physical self from the spiritual self.

1.7 Svasa-Preksha

It is possible to live without food for many days, without water for several days but without air, normally, not more than a few minutes. Thus breathing is the great vital source of energy. Each and every activity of life is intimately connected with the process of breathing. 'Breath is life', this aphorism states that our life is controlled by breath. In the Preksha system of Meditation it has been taken as a basic principle. One inhales oxygen and convert it into vital energy, by the process of internal respiration. Proper breathing, therefore, can become an important tool for physical as well as mental health and happiness.

1.7.1 Philosophical Version of Svasa-Preksha

Breath is intimately connected with the body and mind. It is the bridge permitting access to nervous system, mind and vital energy (prāna-śakti). Breath, body and mind all are energized by the vital energy. Vital energy itself is activated by a subtle body (taijasa sarira). At the ultimate end of this chain is soul or consciousness. And hence perception of the vibrations of breath, body, vital energy and karmic energy is equivalent to cognition of SELF—the conscious energy which animates all other energies including vital energy. The act of breathing is a bridge between the internal
and the external. Except the breath, there is nothing else which comes out as well as goes in. Of course, there is the mind; but mind itself needs to be propped up; it, obviously, cannot become an object of concentrated perception. Breath is very precious and one must not undervalue it as a petty thing. If one becomes competent to control this valuable phenomenon, one will reach greater heights in due course.

1.7.2 Scientific Version of Svasa-Preksha

The body needs a continual supply of oxygen for survival. One can live for a long time without food, for less than a week without water but one would not last more than a few minutes without oxygen. In addition, for a continual supply of oxygen, the body also needs some means of disposing of the waste carbon dioxide produced by the function of the body cells. Breathing or respiration provides a continual replenishment of the oxygen in the lungs, drawing in fresh air and expelling waste gases. Respiration is the physical act of breathing in which air is alternately drawn into the lungs and expelled from them. Mostly this is an unconscious act that goes on throughout the day and even when one is asleep. Breathing includes two phases: inspiration or breathing in and expiration or breathing out.

The difference between bad breathing and scientifically complete breathing lies mostly in the method and its practice. Because one is perpetually under stress and tension, breathing is usually incomplete, hasty, superficial and sometimes even gasping. Logically, therefore, proper breathing depends firstly on removal of tension. Hard (tense) abdominal muscles encumber every breath. Immobilized diaphragm and inflexible rib-cage hinders the entry of air into the lungs more efficiently than a tight belt or a corset. First step, therefore, is to remove the internal girdle by relaxing these muscles. “To breathe is to live”, is undoubtedly a good adage but to breathe correctly that is slowly, silently and deeply is to live long and keep healthy.
Perception of breathing means that the mind is fully engaged in perceiving the breath. It becomes aware of each inhalation and exhalation. Not a single breath escapes the awareness of the mind i.e. every breath is consciously taken and the mind is coupled with breath.

Two techniques of Svasa-Preksha are:

1. **Dirgha-Svasa-Prekha** i.e. perception of slow and deep breathing,

2. **Samavritti-Svasa-Preksha** i.e. perception of breathing through alternate nostrils.

**Dirgha-Svasa-Prekha**: In deep breathing, upward and downward movement of the diaphragm results in the contraction and relaxation of the abdominal wall-muscles. The action of the abdominal muscles is a real event of the present which can become the object of perception. Mental activity is twofold—conceptual thinking and perception. These two functions of mind cannot work simultaneously. The mind engaged in the concentrated perception of an event is not available to the function of thinking. Preksha — concentrated perception is therefore, a practical way and powerful instrument for inhibiting the restlessness of mind by freeing it from the burden of memory, thought and imagination. Perception of breath will not only steady the mind but also halt the train of thought.

**Dirgha Svasa Preksha** is thus a technique in which total concentration is on the pulsating abdominal muscles. Breathing is slow, deep, continuous and rhythmic. It reduces tensions also. An alternative technique is to be aware of the breath by its contact at the junction of the nostrils. Nostrils are the gate-ways for inhalation as well as exhalation. By focusing the attention on their junction, one can be conscious of each and every phase of the breathing process—the respiratory tract, its rate, depth etc. Normally inhalation of cool outside air would produce a sensation of coolness and exhalation of warm air a sensation of warmth inside the nostrils. The entire function is a real event of the present. Awareness of the various phases of
the breath can keep the mind engaged in its perception and, therefore, bereft of thought.

*Samavrtti-Svasa-Preksha*: While in perception of deep breathing, the emphasis is on regulating the rate of breathing, where as in the perception of breath through alternate nostrils, it is on the regulation of the direction of breath— inhalation from right nostril, exhalation from the left, then inhalation from the left and exhalation from the right. This alternation should be effected by will-power. The mind is firmly attached to the breath and is fully aware of each and every phase of the breath. Such union of conscious mind with breathing through alternate nostrils for a length of time is *Samavrtti-Svasa-Preksha*. Its practice results in a better balance between the sympathetic and parasympathetic divisions of the autonomic nervous system. But in this technique of holding the breath, the pause between inhalation and exhalation should not be long as to cause any discomfort.

### 1.7.3 Perception of Breathing: Benefits

Many benefits on various levels accrue from perception of breathing which are given as below:

Perception of breath is an important aid for mental concentration. Besides, it improves circulation, stimulates generation of energy, improves conductivity, and in general, assists the nervous system in its proper functioning. All these collectively result in the control of emotions and passions.

Perception of breath is an unfailing tool for increasing mental alertness and powerful means of achieving this purpose. Once the mind has been fully awakened, its restlessness and wandering vanishes and it becomes vigilant and disciplined.

a) Conscious breathing leads to equanimity. Perception of breath is perception of the present moment which means resting and
relaxing the mind by removing mental tension. Regular practice of *Svasa Preksha* is a sure remedy for tension.

b) As our breathing becomes more and more complete, we produce more vital energy; and its perception leads us to its origin. Activizing this primary source enables us to obtain unlimited energy (*Mahaprajna*, 2004).

1.8  **Jyoti Kendra Preksha**

*Jyoti kendra* is one of the centers of Psychic Centres i.e. *Chaitanya Kendras*. Psychic centres vitalizes all important organs including the sense organs and the mind. An important purpose of meditational practice is to establish a more balanced equilibrium in the functioning of these organs. Perception of psychic centers can do this efficiently.

1.8.1 Philosophical Version

*According to Mahaprajna,* (2003) *Jyoti kendra* is the most important centre for inhibiting urges of anger, sexual excitement etc. Meditational perception of this centre is an efficient means of calming down raging anger. Perception of bright white color on this centre is an excellent tool for subduing all sorts of urges, impulses and excitements.

1.8.2 Scientific Version of *Jyoti Kendra Preksha*

Situated deep inside and in the centre of the head but at the centre of the forehead in the front view, is the centre of Enlightenment (*Jyoti Kendra*). Referring to the endocrine system, it is associated with the pineal body. As the pineal gland begins to slow down its functioning at the age of twelve/thirteen years, i.e. just before adolescence starts. The withdrawal of this gland's control leaves the field free for sexual excitement. Criminal tendencies also begin to raise their ugly heads. If regular meditational practice is introduced at this age and continued through adolescence, it will
keep the pineal-controls active and a well-balanced integrated personality can be developed.

1.8.3 Benefits of Jyoti Kendra Preksha

   a) Pacification of impulses of anger, sexual excitements etc.
   b) Helps in attainment of peace and inner harmony.
   c) A well-balanced integrated personality can be developed.

Meditation is a process of quieting ones mind and blocking out external distractions. The benefits of meditation include: greater creativity, decreased depression, decreased irritability and moodiness, decreased anxiety, increased emotional stability, increased self-actualization, improved learning ability and memory, increased feelings of vitality and rejuvenation and increased happiness. Meditation is as an opportunity to develop ones mental skills describes Anderson (2004). The increasing mental, emotional, and psychological skillfulness can then be applied in day to day living, not just in the moments of quiet meditation. Getting more control over ones mental and emotional environments helps to clarify and simplify life. There is a shift in the interaction with the mental and emotional worlds.