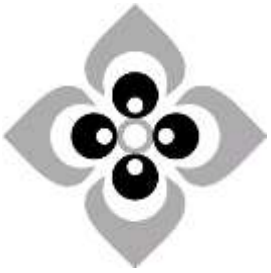

[Glossary]

Mutual Funds (Part-1)

Subject:	Business Economics
Course:	B. A. (Hons.), 5th Semester, Undergraduate
Paper No. & Title:	Paper – 511 Investment Management
Unit No. & Title:	Unit – 4 Mutual Funds
Lecture No. & Title:	Lecture – 1 Mutual Funds (Part-1)

Glossary

Sequence

A sequence is a real valued function defined on a set of natural numbers.

Bounded Sequence

A sequence $\{x_n\}_{n=1}^{\infty}$ of real numbers is said to be bounded if there exists a real number M such that

$|x_n| \leq M \; for \; all \; n.$

Increasing/decreasing sequences

Let $\{x_n\}_{n=1}^{\infty}$ be a sequence of real numbers. Then it is said to be increasing if $x_n \leq x_{n+1}$ for all n. On the other hand if $x_n \geq x_{n+1}$ for all n then the sequence is said to be decreasing.

Limit of a sequence

Let $\{x_n\}_{n=1}^{\infty}$ be a sequence of real numbers and l be any real number. We say that the sequence $\{x_n\}_{n=1}^{\infty}$ has limit l or it converges to l, and we write,

$lim_{n\to\infty} x_n = l$ or $x_n \to l$ as $n \to \infty$,

if for every $\epsilon > 0$, there exists a positive integer n_0 such that $|x_n - l| < \epsilon$ for all $n \geq n_0$.

Convergent and Divergent series

Given a sequence $\{x_n\}$, consider the finite sums of the type $S_k = \sum_{n=1}^{k} x_n$, for $k \in \mathbb{N}$. Then we say that the series $\sum_{n=1}^{\infty} x_n$ converges to a number l and write $\sum_{n=1}^{\infty} x_n = l$ if the sequence $\{S_k\}$ converges to l as $k \to \infty$. If the series is not convergent then we say that it is divergent and the symbol $\sum_{n=1}^{\infty} x_n$ has no meaning.

Polynomial functions

A real valued polynomial function is a function of the form

$y = p(x) = a_0 + a_1 x + a_2 x^2 + \cdots + a_n x^n$

Where $a_i's$ are real constants and n is a positive integer or zero.

Rational functions

A real valued rational function is a function of the form

$y = R(x) = \frac{p(x)}{q(x)}$ Where $p(x)$ and $q(x)$ are real valued polynomials in x. the domain of the rational function $R(x)$ is the set of all x where $q(x) \neq 0$.

Exponential function

An exponential function is a function of the form $y = f(x) = b^x$ defined for all $x \in \mathbb{R}$ and where b is some positive number different from 1.

Logarithmic function

As the exponential function $y = f(x) = b^x$ is a one-one function from $\mathbb{R}$ onto the set of positive reals, its inverse is a function from the set of positive reals onto $\mathbb{R}$. This function is called the logarithmic or in short log function with base b. The notation used for this function is $f^{-1}(y) = \log_b y$. Thus if y is any positive number then $f^{-1}(y) = \log_b y = x$ means that $b^x = y$.