1. What do you understand by scientific management? Discuss the levels of management and managerial skills required for each level.

Ans: Scientific management involves the application of a scientific approach to managerial decision making (consisting of-collection of data, an analysis of data and basing decisions on the outcome of such analyses); and discarding at the same time, all unscientific approaches, like – rule of the thumb, a hit or miss approach and a trial and error approach.

Principles of Scientific Management:
The fundamental principles, which would support the concept and practice of scientific management, are the following:
(i) Science, not the rule of the thumb.
(ii) Harmony, not discord.
(iii) Co-operation, not individualism.
(iv) Maximum production, in place of restricted production.
(v) Development of each person to the greatest of his capabilities.
(vi) A more equal division of responsibility between management and workers.
(vii) Mental revolution on the part of management and workers.

Following is a brief comment on each of the above principles of scientific management:

(i) Science, not the rule of thumb:
The basic principle of scientific management is the adoption of a scientific approach to managerial decision making; and a complete discard of all unscientific approaches, hitherto practiced by managements.

(ii) Harmony, not discord:
Harmony refers to the unity of action; while discord refers to differences in approach.

(iii) Co-operation, not individualism:
Co-operation refers to working, on the part of people, towards the attainment of group objectives; while regarding their individual objectives as subordinate to the general interest.

(iv) Maximum production, in place of restricted production:
In Taylor’s view the most dangerous evil of the industrial system was a deliberate restriction of output. As a means of promoting the prosperity of workers, management and society, this principle of scientific management emphasizes on maximising production and not deliberately restricting it.

(v) Development of each person to the greatest of his capabilities:
Management must endeavor to develop people to the greatest of their capabilities to ensure maximum prosperity for both employees and employers.

(vi) A more equal division of responsibility between management and workers:
The principle of scientific management recommends a separation of planning from execution. According to this principle, management must be concerned with the planning of work; and workers with the execution of plans.

(vii) Mental revolution on the part of management and workers:
According to Taylor, scientific management, in its essence, involves a complete mental revolution on the part of both sides to industry viz. workers and management (representing employers).

In fact, this principle of scientific management is the most fundamental one ensuring success of it. It is like the foundation on which the building of scientific management must be erected.

Though Taylor’s work and practice of it is quite comprehensive and detailed; yet the major aspects of work done by him could be summarized into the following outline structure:

(1) Determination of a fair day’s task for each worker through scientific methods (including the best way of doing a job).
(2) Scientific selection and training of workers.
(3) Standardisation of raw materials, tools and working conditions.
(4) Functional foremanship.
(5) Differential piece-rate system of wage-payment.

Following is a brief account of the above aspects of scientific management:

(1) Determination of fair day’s task for each worker through scientific methods (including the best way of doing a job). For determining a fair day’s task for each worker, Taylor recommended the use of scientific methods involving the conduct of the following three types of work studies, viz.,

(a) Time study
(b) Motion study
(c) Fatigue study

The following points are not worthy in this context:
(i) An average worker (or representative worker) is first selected for conducting the above work-studies. In case otherwise, the standards of work fixed would be either too high or too low.
(ii) The above three work-studies (i.e. time, motion and fatigue studies) are to be considered together to arrive at a fair day’s task.

(2) Scientific selection and training of workers: