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**PC II-5: PEDAGOGY OF BIOLOGICAL SCIENCE**

**Unit –VI Evaluation in biological Science**

**Concept and techniques of achievement test**

An achievement test is a test of developed skill or knowledge. The most common type of achievement test is a standardized test developed to measure skills and knowledge learned in a given grade level, usually through planned instruction, such as training or classroom instruction.

Achievement test may be of different types on the basis of the purpose for which it is administered. They are diagnostic tests, prognostic test, accuracy test, power test, spit test etc. Achievement tests can be administered in different period of time.

**Types of Achievement Test:**

Achievement tests can be of various categories basing on form, purpose, time, method and subject area. Achievement test can be of different forms like oral test, written test and practical test. Items of achievement test can be essay type questions or short answer questions or objective type of questions or combination of all these types.

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On the basis of content or subject matter, achievement tests are categorized as language test, reading test, spelling test, history test, geography test, mathematic test, science test etc. Broadly speaking, all these achievement tests can be divided into two on the basis of quality that is standardized test and teacher made test. Here let us have a discussion on the objective type of achievement test.

**Construction**

Planning of a **test** is a first and very important step in the **construction** of an **achievement test**. An **achievement test** needs very careful planning. For proper planning of the **test**, the investigator kept following aspects in mind such as: in which subject, level, to whom, what, when and how to measure.

**Achievement Test**

Any test designed to assess the achievement in any subject with regard to a set of predetermined objectives

**Major steps involved in the construction of achievement test**

* Planning of test
* Preparation of a design for the test
* Preparation of the blue print
* Writing of items
* Preparation of the scoring key and marking scheme
* Preparation of question-wise analysis

***1. Planning of test***

* Objective of the Test
* Determine the maximum time and maximum marks

*2.* ***Preparation of a design for the test***

Important factors to be considered in design for the test are:

* Weight age to objectives
* Weight age to content
* Weight age to form of questions
* Weight age to difficulty level.

**Preparation of the blue print**

Blue print is a *three-dimensional chart* giving the placement of the *objectives, content* and *form of questions.*

Note: O – Objective Type, SA – Short Answer Type, E – Essay Type

The number outside the bracket indicates the marks and those inside

indicates the number of questions.

**4. Writing of items**

* The paper setter writes items according to the blue print.
* The difficulty level has to be considered while writing the items.
* It should also check whether all the questions included can be answered within the time allotted.
* It is advisable to arrange the questions in the order of their difficulty level.

**CHARACTERISTICS OF ACHIEVEMENT TESTS**

The degree of accuracy with which an exam,

♦ RELIABILITY

♦ **test**  A

♦measures, what it seeks to measure a given variable.

**test** can be objectively scored measures what it intends to measure. Produces consistent scores over time. is valid when it he purpose of achievement testing is to measure some aspect of the intellectual competence of human beings: what a person has learned to know or to do. Teachers use achievement tests to measure the attainments of their students. Employers useachievement tests to measure the competence of prospective employees.

**SCORING VAROIUS KINDS OF ACHIEVEMENT TESTS**

**Achievement Test and its types**

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Achievement test scores are often used in an educational system to determine the level of instruction for which a student is prepared. High achievement scores usually indicate a mastery of grade-level material, and the readiness for advanced instruction.

The purpose of achievement testing is to measure some aspect of the intellectual competence of human beings: what a person has learned to know or to do. Teachers use achievement tests to measure the attainments of their students. Employers use achievement tests to measure the competence of prospective employees. Professional associations use achievement tests to exclude unqualified applicants from the practice of the profession. In any circumstances where it is necessary or useful to distinguish persons of higher from those of lower competence or attainments, achievement testing is likely to occur.

The varieties of intellectual competence that may be developed by formal education, self-study, or other types of experience are numerous and diverse. There is a corresponding number and diversity of types of tests used to measure achievement. In this article attention will be directed mainly toward the measurement of cognitive achievements by means of paper and pencil tests. The justifications for this limitation are (1) that cognitive achievements are of central importance to effective human behavior, (2) that the use of paper and pencil tests to measure these achievements is a comparatively well-developed and effective technique, and (3) that other aspects of intellectual competence will be discussed in other articles, such as those on motivation, learning, attitudes, leadership, aesthetics, and personality.

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**Objects based evaluation**

The Method for Object-Based Diagnostic Evaluation (MODE) tool provides an objective comparison of the overall structure of the forecasted precipitation with what was observed.  Rather than evaluating hits and misses at a point/neighbourhood as is done with the contingency table, object-based evaluation identifies precipitation objects and compares attributes of matched forecast and observed objects.  The attributes considered include area coverage, centroid displacement, intensity, and overlap.