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NATURAL SCIENCE

ACHIEVEMENT TEST

- Achievement test is an important tool in school evaluation and has great significance in measuring instructional progress and progress of the students in the subject area.

- Accurate achievement data are very important for planning curriculum and instruction and for program evaluation

DEFINITION

- "Any test that measures the attainments and accomplishments of an individual after a period of training or learning"- N M Downie

- 'The type of ability test that describes what a person has learned to do' – Throndike and Hagen

- "A systematic procedure for determining the amount a student has learned through instructions" – Groulund

OBJECTIVES

- Identify and explain reasons for performing tests.
- Understand testing terminology to communicate clearly with students and colleagues.
- Evaluate a test's validity and reliability.
- Select appropriate tests.
- Administer test protocols properly and safely.

FUNCTIONS OF TEST

- It provides basis for promotion to the next grade.
- To find out where each student stands in various academic areas.
- It helps in determination about the placement of the students in a particular section.
- To motivate the students before a new assignment has taken up.
- To expose pupil's difficulties which the teacher can help them to solve.

STEPS INVOLVED IN THE CONSTRUCTION OF ACHIEVEMENT TEST

1. Planning of test
2. Preparation of a design for the test
3. Preparation of the blue print
4. Writing of items
5. Preparation of the scoring key and marking scheme
6. 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:

- Weightage to objectives
- Weightage to content
- Weightage to form of questions
- Weightage to difficulty level.

Weightage to objectives

This indicates what objectives are to be tested and what weightage has to be given to each objectives.

Sl.No	Objectives	Marks	Percentage
1	Knowledge	3	12
2	Understanding	2	8
3	Application	6	24
4	Analysis	8	32
5	Synthesis	4	16
6	Evaluation	2	8
Total		**25**	**100**

Weightage to content

This indicates the various aspects of the content to be tested and the weightage to be given to these different aspects.

Sl.No	Content	Marks	Percentage
1	Sub topic – 1	15	60
2	Sub topic – 2	10	40
Total		25	100

Weightage to form of questions

This indicates the form of the questions to be included in the test and the weightage to be given for each form of questions.

Sl.No	Form of questions	No. of Questions	Marks	Percentage
1	Objective type	14	7	28
2	Short answer type	7	14	56
3	Essay type	1	4	16
Total		**22**	**25**	**100**

Weightage to difficulty level

This indicates the total mark and weightage to be given to different level of questions.

Sl.No	Form of questions	Marks	Percentage
1	Easy	5	20
2	Average	15	60
3	Difficult	5	20
Total		**25**	**100**

3.Preparation of the blue print

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

Objectives / Form of Qtn / Content	Knowledge			Under-standing			Application			Analysis			Synthesis			Evaluation			Grant Total
	O	SA	E	O	SA	E	O	SE	E	O	SA	E	O	SA	E	O	SA	E	
Sub Topic – 1	2 (4)			1 (2)			2 (4)	2 (1)				4 (1)		2 (1)			2 (1)		15
Sub Topic – 2	1 (2)			1 (2)				2 (1)			4 (2)			2 (1)					10
Total Marks	3	0	0	2	0	0	2	4	0	0	4	4	0	4	0	0	2	0	25
Grand Total	3			2			6			8			4			2			

4. Writing of items

✓The paper setter write items according to the blue print.

✓The difficulty level has to be considered while writing the items.

✓It should also checked 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.

Eg:-

ST.STEPHENS HIGHER SECONDARY SCHOOL, PATHANAPURAM

ACHIEVEMENT TEST

Std: IX **Time : 45 Mts.**

Div. : D **BIOLOGY** **Max. Marks: 25**

Instruction

Q. 1.

Q. 2.

Q. 3.

Q. 4.

5. Preparation of the scoring key and marking scheme

In the case of objective type items where the answers are in the form of some letters or other symbol a scoring key is prepared.

Q.No	Answer	Marks
1	A	½
2	C	½
3	A	½
4	D	½
5	B	½

SCORING KEY

- In the case of short answer and essay type questions, the marking scheme is prepared.
- In preparing marking scheme the examiner has to list out the value points to be credited and fix up the mark to be given to each value point

MARKING SCHEME

Q.No	Value points	Marks	Total Marks
1	Value Point – 1	½	**2**
	Value point – 2	½	
	Value point – 3	½	
	Value point – 4	½	
2	Value Point – 1	½	**2**
	Value point – 2	½	
	Value point – 3	½	
	Value point – 4	½	

6. Preparation of Question-wise Analysis

It helps to know the strengths and weakness of the test, to tally the question paper and the blueprint, and to determine the content validity of the test.

Q.No	Content	Objectives	Form of Questions	Difficulty Level	Marks	Estimated Time (In Mts.)
1	Sub topic – 1	Knowledge	Objective Type	Easy	½	1
2	Sub Topic – 2	Understanding	Objective Type	Average	½	1
3	Sub Topic – 2	Application	Objective Type	Easy	½	1
4	Sub Topic – 1	Knowledge	Objective Type	Easy	½	1
5	Sub Topic – 2	Understanding	Objective type	Average	½	1
5	Sub Topic – 1	Analysis	Short answer	Average	2	3
6	Sub Topic – 1	Synthesis	Short Answer	Difficult	2	3
7	Sub topic – 2	Application	Short answer	Easy	2	3
8	Subtopic – 1	Analysis	Essay	Average	4	10

THANK
YOU