

## Advanced materials B, SS 2011

### Modalities of the Multiple Choice Tests (MCTs)

A Multiple Choice Test (MCT) consists of typically five independent questions. For any question several answers are proposed (typically 3 to 7 answers). Any question could have from 0 to several correct answers.

Correct answers should be marked by a cross. Please do this in a way that no doubt is possible, if it was your intent to make a cross or not. Answers written with red pens are not allowed, and will not be considered for correction.

The scoring of the MCTs is conducted according to the following rules:

A) The number of attainable points of the test is equal to the number of correct answers (there are questions with more than 1 correct answer).

B) Points for answers will be awarded according to the rules shown in the table.

Four cases can be distinguished:

Student's Solution	Correct Solution	Partial Result
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0 Points
<input type="checkbox"/>	<input type="checkbox"/>	0 Points
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1 Point
<input checked="" type="checkbox"/>	<input type="checkbox"/>	-1 Point

- i. The student has not marked a solution which is correct, this yields 0 points.
- ii. The student has not marked a solution which is wrong, this yields 0 points.
- iii. The student has marked a solution which is correct, this yields 1 point.
- iv. The student has marked a solution which is wrong, this yields -1 point.

The score for a question consists of the sum of all points attained for the individual answers belonging to that question. If this score is below 0, the score for this question will be 0.

C) The sum of the scores for all questions yields the student's result of the MCT.

D) To pass the MCT this sum divided by the total number of points should be  $\geq 50\%$ .

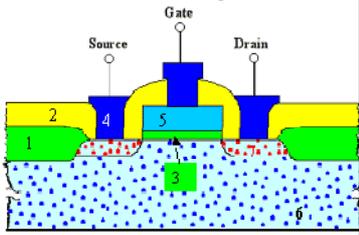
*Hint:* If you have understood the rules correctly, you should be aware that it makes no sense to leave any question completely empty!

On the next page an MCT is shown, which serves as a practical example of how the scoring works. Please note, that the column "correct solution" is not present in a real MCT, here it only serves to explain the principle of scoring.

Exemplary Multiple Choice Test

Name: *Maria Weißesnicht*

Student - ID.: *987654*

Questions	Student's Solution	Correct Solution	Answers		
<b>Question 1:</b> Which values are in the range of semiconductors?	<input type="checkbox"/>	<input type="checkbox"/>	$\rho \approx 10 \Omega$	0 P	<b>Question 1:</b> $\Sigma = (0 + 1 + 0) P = 1 P$ $\Rightarrow 1 P$ of 1 P
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	$\rho \approx 1.0 \Omega\text{cm}$	1 P	
	<input type="checkbox"/>	<input type="checkbox"/>	$\sigma \approx 1.0 \mu\Omega\text{cm}$	0 P	
<b>Question 2:</b> What polarization mechanism do you expect for a solid NaCl single crystal?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Orientation polarization.	-1 P	<b>Question 2:</b> $\Sigma = (-1 + 1 + 1 + 0 + 0) P = 1 P$ $\Rightarrow 1 P$ of 3 P
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Ionic polarization.	1 P	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Electronic polarization.	1 P	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Planar polarization.	0 P	
	<input type="checkbox"/>	<input type="checkbox"/>	None of the above.	0 P	
<b>Question 3:</b> Oxide is found in region. 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1.	0 P	<b>Question 3:</b> $\Sigma = (0 + 0 + 1 - 1 - 1 - 1) P = -2 P$ $\Rightarrow 0 P$ of 3 P
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2.	0 P	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3.	1 P	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.	-1 P	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5.	-1 P	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6.	-1 P	
<b>Question 4:</b> For magnetic moments, the mechanism of orientation polarization describes..?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Paramagnetism.	1 P	<b>Question 4:</b> $\Sigma = (1 + 0 + 0 - 0) P = 1 P$ $\Rightarrow 1 P$ of 1 P
	<input type="checkbox"/>	<input type="checkbox"/>	Antiferromagnetism.	0 P	
	<input type="checkbox"/>	<input type="checkbox"/>	Diamagnetism.	0 P	
	<input type="checkbox"/>	<input type="checkbox"/>	Ferrimagnetism.	0 P	
<b>Question 5:</b> If you want to increase the doping concentration via ion implantation you ...	<input type="checkbox"/>	<input type="checkbox"/>	... increase the accelerating voltage.	0 P	<b>Question 5:</b> $\Sigma = (0 + 1 + 0 + 1) P = 2 P$ $\Rightarrow 2 P$ of 2 P
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	... increase the implantation time.	1 P	
	<input type="checkbox"/>	<input type="checkbox"/>	... increase the scan rate of the ion beam.	0 P	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	... increase the ion current.	1 P	

**TOTAL: 5 P of 10 P**

*✓ Passed*