

King Fahd University of Petroleum & Minerals  
 Department of Mathematical Sciences  
 Math553 “Homological Algebra”  
 Semester 062 (Spring 2007)  
 Dr. Jawad Y. Abuhlail

First Take Home Exam (Due: 30.04.2007, 11:00 am)

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**Remarks:**

1. All questions are from the textbook “M. Osborne, *Basic Homological Algebra*, Springer (2000)”.
2. Give self-contained proofs and arguments.

Solve 10 questions from the following list, (including at least 7 questions that are marked with “\*”):

| Chapter  | Questions  |
|----------|--|
| <b>2</b> | 6, 7*, 8*, 12*, 16*                                      |
| <b>3</b> | 1*, 5, 7*, 8*, 10*, 12                                   |
| <b>6</b> | 3*, 4, 5*  |
| <b>7</b> | 1*, 3, [16, 18*, 19* for $\mathbf{A} = {}_R\mathbb{M}$ ] |
| <b>8</b> | 1*   |

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## Grades

| #   | Chapter | Question     | Grade/20 |
|-----|---------|--------------|----------|
| 1.  |         |              |          |
| 2.  |         |              |          |
| 3.  |         |              |          |
| 4.  |         |              |          |
| 5.  |         |              |          |
| 6.  |         |              |          |
| 7.  |         |              |          |
| 8.  |         |              |          |
| 9.  |         |              |          |
| 10. |         |              |          |
|     |         |              |          |
|     |         | <b>TOTAL</b> |          |