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| **King Saud University** | KSU logo tiff.tif | **Math 151** |
| **Science and Medical Studies Section for girls** | **first Term 1433-34H** |
| **College of Science** | **Second midterm Exam** |
| **Department of Mathematics** | **75 minuets** |

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| **Name:** | **Student No.:** |
| **Section No.:** | **Sequence No.:** |

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| **Question No.** | **I** | **II** | **III** | **IV** | **Total** |
| **Mark** |  |  |  |  |  |

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| **Question I**  **Choose the correct answers and write them in the following table:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Question** | **1** | **2** | **3** | **4** | **5** | **6** | | **Answer** |  |  |  |  |  |  |  1. **If is symmetric, then .** 2. **True. b) False.** 3. **There exist a relation which is symmetric and antisymmetric.** 4. **True. b) False.** 5. **Which of the following is a partition of** 6. **Let R be a relation defined on the set of integers by**   **The relation is**   1. **an equivalence relation.** 2. **partial order relation.** 3. **symmetric.** 4. **transitive.** 5. **None of the previous.** 6. **Let be a nonempty set and be a relation defined on as follows:**   **The symmetric closure of is :**   1. **None of the above.** 2. **Let be a nonempty, and let be defined by:**   **for Then is**   1. **totally ordered relation.** 2. **Partially ordered relation but not totally ordered relation.** 3. **Equivalence relation.** 4. **None of the previous.** | | |
| **Question II**  **Let, and let . Find:**   1. **.** 2. **The transitive closure of.** 3. **The reflexive closure of** | | |
| **Question III**   1. **Let be a an equivalence relation defined on by**   **Find the partition of induced by.**   1. **Find the relation induced by the following Hass diagram:** | | |
| **Question IV**  **Let be the relation defined on by**    **for .**   1. **Prove that is an equivalence relation .** 2. **Find**     Good Luck | | |
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| **Science and Medical Studies Section for girls** | **First Term 1433-34H** |
| **College of Science** | **Second quiz** |
| **Department of Mathematics** | **15 minuets** |

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| **Using the second principle of mathematical induction prove the following:**  **Let be a sequence defined by:**  **for all**  **Prove that for all** |