

**PhD Comprehensive Exam**  
**Communications Specialization - Academic Year 2023-2024**

**Examination Time:** 4 Hours

**Reading Materials:**

**Part I: Resource Allocation**

**Examiner:** Dr. Fatma Newagy (Professor of Communications at Ain Shams University)

**Book Title:**

Fundamentals of Resource Allocation in Wireless Networks: Theory and Algorithms  
Slawomir Stanczak , Marcin Wiczanowski and Holger Boche

Reading Material: Second part of the book

**Part II: Signal Theory**

**Examiner :** Dr. Mohamed Hesham Farouq (Professor of Mathematics at Cairo University)

**Book Title:**

An Introduction to Statistical Learning, Gareth James, Daniela Witten, Trevor Hastie and Robert Tibshirani

Reading Material: Chapters 2,3 and 4

**Part III: Information Theory and Channel Coding**

**Examiner:** Dr. Magdy EL-SOUDANI (Professor of Communications at Cairo University)

**Book Title:**

Essentials of Error-Control Coding, Jorge Castineira Moreira, Patrick Guy Farrell

Reading Material: Chapters 2,3 and 4

**Part IV: Digital Communications**

**Examiner:** Dr. Mohamed Khairy (Professor of Communications at Cairo University)

**Book Title:**

Digital Communications, J. Proakis and M. Salehi, Publisher: McGraw-Hill, 2008

Reading Material: 4, 9, and 13

**Part V: Subject Selected by PhD Thesis Supervisor**