

COMPUTER SCIENCE TRIPOS Part IB – 2024 – Paper 6

2 Complexity Theory (tg508)

- (a) Provide a precise definition of the following complexity classes: EXP , NEXP , and NPSPACE . [3 marks]
- (b) Prove that $\text{NPSPACE} \subseteq \text{EXP} \subseteq \text{NEXP}$. [7 marks]
- (c) Prove that if $\text{P} = \text{NP}$, then $\text{EXP} = \text{NEXP}$. [10 marks]