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| Discrete Mathematics and Number System | |
| **SOURCE: 01** | **Discrete Mathematics (GATE EXAM)** | |
| 01 | [Discrete Mathematics Syllabus](https://www.youtube.com/watch?v=YBb2oYIzXK0&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=1&pp=iAQB) | |
| 02 | [Introduction to Set Theory | Set, Subset, Proper Subset](https://www.youtube.com/watch?v=QMutqqG7CJE&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=2&pp=iAQB) | |
| 03 | [Power Set | Set Theory and Algebra](https://www.youtube.com/watch?v=EaupQhQ4dsw&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=3&pp=iAQB) | |
| 04 | [Relation in Set Theory with Example](https://www.youtube.com/watch?v=a81yyR60N3k&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=4&pp=iAQB) | |
| 05 | [Reflexive Relation with Example](https://www.youtube.com/watch?v=1Vldmhfd8dk&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=5&pp=iAQB) | |
| 06 | [How Man Reflexive Relations Possible](https://www.youtube.com/watch?v=peOSZ1JsbPo&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=6&pp=iAQB) | |
| 07 | [Irreflexive Relation with Example](https://www.youtube.com/watch?v=E7oaoettBpo&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=7&pp=iAQB) | |
| 08 | [Symmetric Relation with Example](https://www.youtube.com/watch?v=-6oHeRpVG_o&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=8&pp=iAQB) | |
| 09 | [Antisymmetric Relation with Example](https://www.youtube.com/watch?v=d6yFAmcL2bo&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=9&pp=iAQB) | |
| 10 | [Asymmetric vs Antisymmetric Relation with Example](https://www.youtube.com/watch?v=e0qt5TXdiqQ&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=10&pp=iAQB) | |
| 11 | [Transitive Relation with Examples](https://www.youtube.com/watch?v=aqqVDVPftzE&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=11&pp=iAQB) | |
| 12 | [Equivalence Relation in Discrete Mathematics with Examples](https://www.youtube.com/watch?v=VkWGSqRGozw&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=12&pp=iAQB) | |
| 13 | [Partial Order Relation | POSET in Discrete Mathematics](https://www.youtube.com/watch?v=h5Lv5ZeNl0g&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=13&pp=iAQB) | |
| 14 | [Totally Ordered Set in Discrete Mathematics](https://www.youtube.com/watch?v=22ka59dkT_o&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=14&pp=iAQB) | |
| 15 | [Comparison of All Relations | Reflexive, Irreflexive, Transitive, Symmetric, Antisymmetric](https://www.youtube.com/watch?v=kSKmoNnXmHM&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=15&pp=iAQB) | |
| 16 | [Introduction to Group Theory](https://www.youtube.com/watch?v=K6gRKzkd1mI&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=16&pp=iAQB) | |
| 17 | [Algebraic Structure in Discrete Mathematics](https://www.youtube.com/watch?v=_i_XRDXcCJY&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=17&pp=iAQB) | |
| 18 | [Semigroup in Group Theory](https://www.youtube.com/watch?v=CxffkidIty4&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=18&pp=iAQB) | |
| 19 | [Monoid in Discrete Mathematics | Group Theory](https://www.youtube.com/watch?v=wYPEEJLVjXg&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=19&pp=iAQB) | |
| 20 | [Group in Discrete Mathematics with Example](https://www.youtube.com/watch?v=JAvICe01xj0&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=20&pp=iAQB) | |
| 21 | [Abelian Group in Discrete Mathematics with Example](https://www.youtube.com/watch?v=vAEK1d6KFog&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=21&pp=iAQB) | |
| 22 | [Function in Discrete Mathematics](https://www.youtube.com/watch?v=CClqErMJ-38&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=22&pp=iAQB) | |
| 23 | [How Many Functions Possible | Counting Functions](https://www.youtube.com/watch?v=MkAttwDquoc&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=23&pp=iAQB) | |
| 24 | [One to One Function (Injection) | Injective Function](https://www.youtube.com/watch?v=z810qMsf5So&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=24&pp=iAQB) | |
| 25 | [ONTO Function (Surjection) | Surjective Function](https://www.youtube.com/watch?v=jqaNaJRrg3s&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=25&pp=iAQB) | |
| 26 | [Bijective Function (Bijection)](https://www.youtube.com/watch?v=zv2ONqtOK7g&list=PLxCzCOWd7aiH2wwES9vPWsEL6ipTaUSl3&index=26&pp=iAQB) | |
| **SOURCE: 02** | **Number System (GATE EXAM)** | |
| 01 | [Number System in Digital Electronics](https://www.youtube.com/watch?v=2joeDD5-v3s&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=1&pp=iAQB) | |
| 02 | [Convert Decimal to Any Other Base (Binary | Octal | Hex)](https://www.youtube.com/watch?v=M6c6Xw5mt90&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=2&pp=iAQB) | |
| 03 | [Convert Any Base to Decimal (Binary | Octal | Hex)](https://www.youtube.com/watch?v=FvR7kxQ2spY&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=3&pp=iAQB) | |
| 04 | [Conversion Between (Binary, Octal, Hexadecimal) | Conversion Between Any Base with Power of 2](https://www.youtube.com/watch?v=tmKifgc-X7g&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=4&pp=iAQB) | |
| 05 | [Question of Number System](https://www.youtube.com/watch?v=h8P0cs0ueHQ&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=5&pp=iAQB) | |
| 06 | [What are Signed and Unsigned Number | Arithmetic Operation](https://www.youtube.com/watch?v=XV91bg6KvmQ&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=6&pp=iAQB) | |
| 07 | [Addition in Binary, Octal, and Hexadecimal Number System](https://www.youtube.com/watch?v=XHTUGBn-dSg&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=7&pp=iAQB) | |
| 08 | [BCD, Excess-3 Code and conversion with Example](https://www.youtube.com/watch?v=UgU5Og9Umak&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=8&pp=iAQB) | |
| 09 | [Binary to Gray Code conversion and Vice-versa](https://www.youtube.com/watch?v=R7uuIACpdGQ&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=9&pp=iAQB) | |
| 10 | [Floating Point Representation with Example](https://www.youtube.com/watch?v=4gNs7B4ZTjc&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=10&pp=iAQB) | |
| 11 | [Find 1’s Complement and 2’s Complement](https://www.youtube.com/watch?v=pXIfEklKsOQ&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=11&pp=iAQB) | |
| 12 | [Complements (1’s, 2’s, 7’s, 8’s, 9’s, 10’s, 15’s, 16’s) | r’s Complements | (r-1)’s](https://www.youtube.com/watch?v=nKzy4s4sI-4&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=12&pp=iAQB) | |
| 13 | [BCD Addition with Examples](https://www.youtube.com/watch?v=L6a1ldUOCN0&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=13&pp=iAQB) | |
| 14 | [Binary Multiplication with Example](https://www.youtube.com/watch?v=mVcoDEXzcOg&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=14&pp=iAQB) | |
| 15 | [Ranges of Sign Magnitude, 1’s and 2’s Complement](https://www.youtube.com/watch?v=2t2mQMcUNGo&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=15&pp=iAQB) | |
| 16 | [Introduction to Binary Code (ASCII, UNICODE, EBCDIC, BCD)](https://www.youtube.com/watch?v=0UVSPwzGw4U&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=16&pp=iAQB) | |
| 17 | [Self-Complementary Codes](https://www.youtube.com/watch?v=0H2EA9NWJ44&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=17&pp=iAQB) | |
| 18 | [Short Trick for 2’s Complement](https://www.youtube.com/watch?v=7BtiYqPDL7k&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=18&pp=iAQB) | |
| 19 | [Short Trick for 9’s and 10’sComplement](https://www.youtube.com/watch?v=bPy_wHWOvv0&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=19&pp=iAQB) | |
| 20 | [Short Trick for 7’s and 8’s Complement Short Trick](https://www.youtube.com/watch?v=nydV1QLVfvk&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=20&pp=iAQB) | |
| 21 | [Binary Addition and Subtraction](https://www.youtube.com/watch?v=4cjs2GrOf6Y&list=PLxCzCOWd7aiFOet6KEEqDff1aXEGLdUzn&index=21&pp=iAQB) | |