

B.Sc. Sem.-6 Examination

CC-309

Electronics

April-2025

Time : 2-30 Hours]

[Max. Marks : 70

| Instructions: (1) The symbol have their usual meanings. (2) Figures to the right indicate marks | | |
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| Q-1 | | |
| A) | Why we use fiber optics? Write notes on history of fiber optics | 07 |
| B) | Explain following terms (1) Dispersion (2) Diffraction (3) Scattering | 07 |
| OR | | |
| Q-1 | | |
| A) | What is reflection and refraction? Explain with necessary figure | 07 |
| B) | Explain absorption, Fresnel reflection and snell's law in brief. | 07 |
| Q-2 | | |
| A) | Draw the block diagram of TRF receiver and explain each block | 07 |
| B) | Draw the block diagram of Super Heterodyne Receiver and explain each block | 07 |
| OR | | |
| Q-2 | | |
| A) | Explain principles of simple automatic gain control | 07 |
| B) | Explain operation of diode detector | 07 |
| Q-3 | | |
| A) | What is television systems and standards? Explain in detail | 07 |
| B) | What is scanning process? Explain different types of scanning in detail | 07 |
| OR | | |
| Q-3 | | |
| A) | Write notes on composite video signal | 07 |
| B) | Explain basic principle of color television | 07 |
| Q-4 | | |
| A) | Explain history of the computer system. | 07 |
| B) | Explain Bandwidth requirement in digital technology | 07 |
| OR | | |
| Q-4 | | |
| A) | Explain following term of digital technology (1) Noise (2) Cross talk | 07 |
| B) | What is error detection and correction in digital communication? Explain Redundant code in detail. | 07 |
| Q-5 | Attempt any seven out of twelve | 14 |
| 1 | What is refractive index of glass and diamond? | |
| 2 | In which year Theodore Maiman of Hughes Research Laboratory operated the first laser? | |
| 3 | Write the name of natural philosopher living in England, demonstrated one of the first guided light systems to the Royal Society. | |
| 4 | Compare TRF and super Heterodyne receiver | |

E168-2

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|----|--|--|
| 5 | What is the main function of local oscillator? | |
| 6 | Write the advantages of RF amplifier | |
| 7 | Write the Full form of FCC and NTSC | |
| 8 | Compare American standard and European system Television system. | |
| 9 | What is synchronization? | |
| 10 | Write the Full form of ASCII | |
| 11 | Which code known as universal punch card code?. | |
| 12 | Write the name of law is related to random noise. | |