

Instructions: 1. Symbols have their usual meaning.

2. Figures on right hand side show marks of that question.

1. (a) Explain in brief the formation of Plasma. [07]
(b) Describe effect and role of collision in the elementary process of Plasma. [07]

OR

1. Write in detail about properties of plasma. [14]
2. Write short on (Any two): [14]
(1) PIN diode
(2) PN Photodiode
(3) Photo Transistor

OR

2. Describe in brief the principle , working and applications of Light activated SCR. [14]
3. (a) Describe principle, working and applications of Light Emitting Diode. [10]
(b) Explain in brief the electromagnetic Spectrum [04]

OR

3. What is Photovoltaic effect ? Describe the operation , characteristics , fill factor of Solar cell . [14]
4. What is multivibrator ? Write about transistorized astable multivibrator and explain its operation with different waveforms. [14]

OR

4. (a) Write in brief about Mono stable operation of IC- 555. [10]
(b) Determine the frequency of oscillation in the astable multivibrator using IC-555 circuit if $R_1 = R_2 = 50K\Omega$, $C_2 = C_1 = 0.05\mu F$. [04]

5. (a) What do you mean by edge-triggered flip-flop , explain in short. [04]
(b) Write in short about SR-flip flop. [07]
(c) Write note on NAND latch. [03]

OR

5. Write note on : (1) Applications of LASCOR (2) Clocked S-R flip flop. [14]

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