

T.YB. Sc. (Physics) , Oct-2017
Paper – 305 : Electronics, Plasma physics, Solar Physics

Time: 2 Hours]

code → 8941

[Total Marks 75

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- Instructions: 1. Symbols have their usual meaning.
2. Figures on right hand side show marks of that question.

1. (a) What is distortion ? Graphically explain harmonic distortion. [09]
(b) Classify the power amplifiers , Explain them in brief. [10]

OR

1. (a) What is collector efficiency of power amplifier? Show that maximum collector efficiency of Series-Fed class A power amplifier is 25%. [12]
(b) Explain Ripple and reduction of ripple by filters. [07]
2. What is multivibrator ? Describe about transistorized monostable multivibrator and explain its operation with different waveforms. Which are possible areas of physical sciences where one can use multivibrator ? [19]

OR

2. Describe the operation, characteristics, fill factor and efficiency of Solar cell. [19]
3. (a) Write in detail about Light Emitting Diode. [11]
(b) What are differences between Photoconductive sensors and Photovoltaic sensors ? Explain one of them in brief. [08]

OR

3. (a) Draw the circuit diagram of the edge triggered JK flip-flop and explain its operation. [10]
(b) Determine the frequency of oscillation in the astable multivibrator using IC-555 circuit if $R_A = R_B = 2.5K\Omega$, $C = 0.1\mu F$ and $C_1 = 0.02\mu F$. [04]
(c) Write note on NAND latch. [05]

4. Describe in detail the properties, formation of Plasma. [18]

OR

4. Write short on:(Any three) [18]
(1) Light Dependent Resistor (LDR)
(2) PIN diode
(3) Different states of matter.
(4) LASER diode.