

S. E. sem-III (old) Electrical - Basic Electronics
02/12/16
QP Code : 542500

(3 Hours)

[Total Marks : 100

- N. B. : (1) Question Number 1 is compulsory.
(2) Attempt any four questions out of remaining six.

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| 1. (a) Explain Zener breakdown and avalanche breakdown. | 5 |
| (b) Draw and explain re Model. (5*4) | 5 |
| (c) Explain the construction and working of photo transistor. | 5 |
| (d) Explain the characteristics of JFET | 5 |
| 2. (a) Explain any two Clamping circuits with neat circuit diagram and waveforms. | 10 |
| (b) Explain single stage CE amplifier. | 10 |
| 3. (a) Explain construction, working, characteristics of n channel MOSFET. | 10 |
| (b) What are types of voltage doubler circuit? Explain any one of them in detail. | 10 |
| 4. (a) Explain dual input balanced output BJT differential amplifier. | 10 |
| (b) Explain voltage series feedback amplifier circuits Also discuss its effect on input impedance, output impedance, band-width, voltage gain. | 10 |
| 5. (a) Draw h parameter module for CE Amplifier and derive equations for A_v , R_i , A_o , R_o . | 10 |
| (b) Explain the operation of photo-transistor with the help of suitable diagrams. Mention the application also | 10 |
| 6. (a) Explain single and double ended clipping circuit with the help of suitable diagram. | 10 |
| (b) Explain the Frequency response of of BJT amplifier | 10 |
| 7. Write short notes on (Any three) | 20 |
| a) Solar cell | |
| b) Optoisolator | |
| c) Varactor Diode | |
| d) Thermal runaway | |