




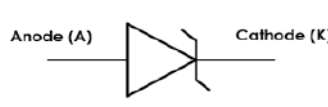
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**312314 – Basic Electronics (Sem II)**

**As per MSBTE's K Scheme**

**AO/ DE/ EJ/ ET/ EX/ IC/ IE/ IS/ MU/ TE**

<b>Unit I</b>		<b>Applications of Diode</b>		<b>Marks - 14</b>	
<b>S. N.</b>	<b>MSBTE Board Asked Questions</b>	<b>Exam Year</b>	<b>Marks</b>		
1.	State material used for LED's to emit different colour light.	S-18	02M		
2.	Sketch the symbol of P-channel and n-channel depletion type MOSFET.	S-18	02M		
3.	State cut in voltage value of diode for silicon and germanium.	S-18	02M		
4.	Describe experimental set-up for operation of P-N junction diode in forward bias. Draw its characteristics.	S-18	04M		
5.	Describe circuit diagram of bridge rectifier, draw its input and output waveforms	S-18	04M		
6.	State the values of following parameters for half wave and full wave rectifiers: I.Number of diode used in circuit. II.Rectification efficiency ( $\eta$ ) III.Transfer Utilization Factor (TUF) IV.Ripple factor	S-18			
7.	Draw circuit diagram and input and output waveforms of full wave rectifier connected with a filter.	S-18	06M		
8.	Describe V-I characteristics of zener diode.	S-18	06M		
9.	Show constructional details of LED. Give any two applications of LED.	S-18	06M		
10.	Draw the symbol of photodiode.	W-18	02M		
11.	Sketch energy band diagram of semiconductor	W-18	02M		
12.	Compare PN junction diode & zener diode (four points)	W-18	04M		

13.	<p>State the values of following parameters with reference to full wave rectifier:</p> <ul style="list-style-type: none"> <li>i. Ripple Factor</li> <li>ii. Efficiency</li> <li>iii. TUF</li> <li>iv. P/V</li> </ul>	W-18	04M
14.	Compare L, C, LC and $\pi$ filter on the basis of usefulness in reducing or suitability for heavy/light load.	W-18	04M
15.	Explain V-I Characteristics of zener diode	W-18	06M
16.	Draw the characteristics of LED and write advantages, disadvantages and application of it (each two points)	W-18	06M
17.	Draw circuit and describe working of full wave rectifier using center tapped transformer with waveforms.	W-18	06M
18.	Define the term 'knee voltage' of P-N junction diode	S-19	02M
19.	<p>Compare P-N junction diode with zener diode on the basis of :</p> <ul style="list-style-type: none"> <li>i.Symbol</li> <li>ii.Type of reverse break down</li> <li>iii.V I characteristics</li> <li>iv.Material</li> </ul>	S-19	04M
20.	Sketch and explain zener diode as voltage regulator.	S-19	04M
21.	Sketch circuit diagram of bridge rectifier with $\pi$ filter.	S-19	04M
22.	<p>Compare half wave rectifier with full wave (centre tapped) rectifier on the basis of :</p> <ul style="list-style-type: none"> <li>i.No. Of required diodes.</li> <li>ii.Rectifier efficiency</li> <li>iii.Ripple factor</li> <li>iv.Transformer utilization factor</li> </ul>	S-19	04M
23.	Sketch V-I characteristics of P-N junction diode. Calculate static forward resistane if applied forward bias voltage is 0.8 V and corresponding diode current is 150 mA.	S-19	06M
24.	<p>Identify the components of following symbol.</p> <p>(i)  (ii) </p>	W-19	02M

25.	<p><b>Compare P-N junction diode and zener diode on following parameters:</b></p> <p><b>i.Symbol</b></p> <p><b>ii.Doping Level</b></p> <p><b>iii.Breakdown Voltage</b></p> <p><b>iv.Applications.</b></p>	W-19	04M
26.	<p><b>Define following parameter of rectifier:</b></p> <p><b>i. Ripple factor</b></p> <p><b>ii. Efficiency</b></p> <p><b>iii. Peak Inverse Voltage</b></p> <p><b>iv. Transformer utilization factor</b></p>	W-19	04M
27.	<p><b>State any four applications of regulated D.C. power-supply.</b></p>	W-19	04M
28.	<p><b>Compare half wave rectifier and full wave bridge rectifier with following parameters</b></p> <p><b>i.No. of diodes used</b></p> <p><b>ii.Efficiency</b></p> <p><b>iii.Peak inverse voltage</b></p> <p><b>iv.Ripple frequency</b></p>	W-19	04M
29.	<p><b>Draw circuit diagram for <math>\pi</math>filter and explain it's working with waveforms.</b></p>	W-19	04M
30.	<p><b>Draw the symbol of LED and Zener diode.</b></p>	S-22	02M
31.	<p><b>Draw the forward bias characteristics of Silicon(Si) PN junction diode.</b></p>	S-22	02M
32.	<p><b>Compare PN junction diode and Zener diode.</b></p>	S-22	04M
33.	<p><b>State the values of the following parameters with reference to full wave rectifier:</b></p> <p><b>i.Ripple factor</b></p> <p><b>ii.Efficiency</b></p> <p><b>iii.TUF</b></p> <p><b>iv.PIV</b></p>	S-22	04M
34.	<p><b>Draw circuit diagram and waveforms of full wave centre tipped rectifier.</b></p>	S-22	04M
35.	<p><b>Explain forward and reverse biased VI characteristics of PN</b></p>	S-22	04M

	junction diode.		
36.	With the help of reverse characteristics of zener diode explain its use as a regulator.	S-22	04M
37.	Draw the construction of LED & write advantages, disadvantages and application of it.(each two points)	S-22	04M
38.	Draw the constructional diagram of LED and label it.	W-22	02M
39.	State the working principle of photodiode.	W-22	02M
40.	Draw the circuit of Zener diode as voltage regulator	W-22	02M
41.	Define the following terms: i.PIV ii.Efficiency iii.Ripple factor iv.TUF	W-22	04M
42.	Draw the V-I characteristics of Zener diode in reverse bias and explain it.	W-22	06M
43.	Draw and explain forward and reverse V-I characteristics of PN junction diode and justify their use as rectifier.	W-22	06M
44.	Draw the bridge rectifier circuit. Describe its working with the input and output waveforms.	W-22	06M

**Thank You**

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