

Diode & Transistor Study Guide Answers

- 1) On (Forward Biased) 2) Forward 3) Reversed
 4) Reversed 5) Forward 6) Forward
 7) Reversed
 8) On 9) On 10) Off
 11) Off 12) On 13) On
 14) Off
 15) E= 0v, B= 0.7v, C= 0v 16) E= 5v, B= 4.3v, C= 5v
 17) E= 5v, B= 0v, C= 30v 18) E= 20v, B= 15v, C= 30v
 19) E= 15v, B= 15.7v, C= 15v 20) E= 0v, B= -0.7v, C= 0v
 21) E= -5v, B= 5v, C= -30v

22)

	R1	D1
E	8v	2v
I	8ma	8ma

23)

	R1	D1
E	9.3v	0.7v
I	9.3ma	9.3ma

24)

	R1	D1
E	20v	5v
I	20ma	20ma

25)

	R1	R2	D1
E	20v	5v	5v
I	20ma	10ma	10ma

26)

	R1	R2	R3	D1
E	20v	5v	5v	5v
I	20ma	0.5ma	0.5ma	19ma

27)

	R1	D1	D2	D3
E	7.9v	0.7v	0.7v	0.7v
I	7.9ma	7.9ma	7.9ma	7.9ma

28)

	R1	D1	D2	D3
E	6.6v	2v	0.7v	0.7v
I	6.6ma	6.6ma	6.6ma	6.6ma

29)

	R1	D1	D2	D3
E	0v	0v	10v	0v
I	0a	0a	0a	0a

30)

	R1	D1	D2	D3	D4
E	12.6v	4v	0.7v	0.7v	2v
I	12.6ma	12.6ma	12.6ma	12.6ma	12.6ma

31) Yes

32) Yes

33) No

34) No

35) Low

36) Low

37) High

38) Q1 = Off,

Q2 = Off,

Q3 = On

39) Switch S1 moves down to connect -18v (a High Signal level) over to U1B. Therefore a High (-18v) is on the base of Q1 (through R1) which turns on Q1. With Q1 on -24v is felt at D1 & D2 which will forward bias the two diodes which will put -24v at the gates of Q2 & Q3 thus shutting off the 2-mix to the control room speakers.