EEl 3041 Exam 1 practice solution Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Problem 1 (25 pts) **Show All Work!**

In the circuit below

*I*

*a*



+

\_

+

*V*

\_

36 V





*b*

1. The voltage drop across the  resistor is a) 12 V b) 8 V c) 12 V d) 36 V

e) none of the above



2. The current *I* is a) 0.5 mA b) 1.5 mA c) 2 mA d) 1 mA e) none of the above



3. The power supplied by the 36 V source is a) 36 mW b) 24 mW c) 48 mW d) 72 mW

e) none of the above



4. The power absorbed by the  resistor is a) 4 mW b) 8 mW c) 12 mW

d) 36 mW e) none of the above



5. The voltage  is a) 12 V b) 8 V c) 20 V d) 36 V e) none of the above



Problem 2 (30 pts)

In the circuit below

*I*2

*I*1

+

*V*

\_





12 mA

6. The current *I*1 is a) 1 mA b) 8 mA c) 2 mA d) 4 mA e) none of the above



7. The current *I*2 is a) 1 mA b) 8 mA c) 2 mA d) 4 mA e) none of the above



8. The resistor *R*1 is a) absorbing 32 mW b) absorbing 64 mW c) supplying 16 mW

d) absorbing 128 mW e) none of the above



9. The resistor *R*2 is a) absorbing 32 mW b) absorbing 64 mW c) supplying 16 mW

d) absorbing 128 mW e) none of the above



10. The voltage *V* is a) 16 V b)  c) 4 V d) 8 V e) none of the above



11. The current source is a) supplying 128 mW b) supplying 64 mW c) absorbing 128 mW

d) supplying 192 mW e) none of the above



Problem 3 (45 pts)

In the circuit below

*b*

*a*

90 *V*

+

\_



















*d*

*c*

12. The equivalent resistance seen by the 90 *V* source, *Rac* is

a)  b)  c)  d)  e) none of the above

*b*











*a*



*d*

*c*

13. The current *I*1 is a) 3 A b) 4 A c) 6 A d) 10 A e) none of the above



14. The current *I*2 is a) 1.5 A b) 2.4 A c) 0.5 A d) 1.8 A e) none of the above



15. The current *I*3 is a) 1.5 A b) 1.2 A c) 0.8 A d) 4.5 A e) none of the above



16. The current *I*4 is a) 3 A b) 0.6 A c) 2.8 A d) 0.5 A e) none of the above



17. The current *I*5 is a) 3 A b) 0.6 A c) 2.8 A d) 0.5 A e) none of the above



18. The voltage  is a) 90 V b) 30 V c) 50 V d) 60 V e) none of the above



19. The voltage  is a) 90 V b) 30 V c) 50 V d) 60 V e) none of the above



20. The power supplied by the 90 V source is a) 100 W b) 270 W c) 324 W

d) 480 W e) none of the above



Answer Sheet Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. \_\_\_\_\_ 16. \_\_\_\_\_

2. \_\_\_\_\_ 17. \_\_\_\_\_

3. \_\_\_\_\_ 18. \_\_\_\_\_

4. \_\_\_\_\_ 19. \_\_\_\_\_

5. \_\_\_\_\_ 20. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

15. \_\_\_\_\_

1. \_\_\_\_\_