

**Welcome**, dear Career Seeker.

Please fill in all your details below and return to [careers@ktg-eng.com](mailto:careers@ktg-eng.com) or fax to 086 587 1883.

Please answer all the questions following thereafter **honestly** and to **your best** ability.

Please visit <http://www.ktg-eng.com/index.php/careers-at-ktg> that will highlight your career and development advancement opportunities.

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**Our expectations:**

You will be expected to:

- Train with and as part of the team.
- Complete all tasks assigned.
  - You will be given the necessary support and guidance.
- Communicate effectively in English, on all aspects, both positive and negative.
  - Verbal, written and comprehension skills are critical as documents and software used are detailed and specific.
  - Command of the English language (as all literature and software are in English versions, *as well as other international languages which are not used by us or the South African market widely yet*).
- Document your progress for evaluation and as a guide to others on how you achieved your success.
- Attend all training sessions.
  - Training will be conducted on weekends when no weekend work/on-the-job-training is scheduled.
- Train other junior members as and when they come along.
- Come up with or contribute to solutions where problems may arise.

We expect to work as a family and grow as a family, a team that conquers all and achieves the highest success!

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1. Name : \_\_\_\_\_

2. Surname : \_\_\_\_\_

3. I.D. No. : \_\_\_\_\_

4. Contact No./s : \_\_\_\_\_

5. Contact No./s : \_\_\_\_\_

6. Driver's License : \_\_\_\_\_

7. Application/Interview for:

- a. In-service training \_\_\_\_\_
- b. Apprenticeship \_\_\_\_\_
- c. Work Experience \_\_\_\_\_
- d. Learnership \_\_\_\_\_

1. Are you focused on a job or a career? \_\_\_\_\_
  - a. If a job (employment for wages):
    - i. What salary are you expecting? \_\_\_\_\_
      1. Are you prepared to start low and prove your way to higher pay? \_\_\_\_\_
      2. If not, why? \_\_\_\_\_  
\_\_\_\_\_
      3. If yes, why? \_\_\_\_\_  
\_\_\_\_\_
  - b. If a career:
    - i. What salary are you expecting:
      1. Are you prepared to start low and prove your way to higher pay? \_\_\_\_\_
      2. Or is it irrelevant as you believe the rewards will happen automatically?  
\_\_\_\_\_
2. Please describe in a few lines and in point form your plan for the next 5 years:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_
  - g. \_\_\_\_\_
3. Is there any specific reason you have:
  - a. Responded to this opportunity?
 

\_\_\_\_\_

\_\_\_\_\_
  - b. Why are you prepared to start at these conditions advertised?
    - i. \_\_\_\_\_
    - ii. \_\_\_\_\_
  - c. What are your alternatives?
    - i. \_\_\_\_\_
    - ii. \_\_\_\_\_

4. Have you considered starting your own business or even done so?

\_\_\_\_\_

i. What type of business?

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

2. More details: \_\_\_\_\_

\_\_\_\_\_

3. IF you are in your own business (now or in the future), how do you think you can grow the business (**not** just your profits)?

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

ii. If not, why?

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

\_\_\_\_\_

\_\_\_\_\_

5. Do you prefer job security over managing your own business? \_\_\_\_\_

a. Why? \_\_\_\_\_

\_\_\_\_\_

6. What sacrifices are you prepared to make to advance with this company to achieve your goals:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

f. \_\_\_\_\_

7. What is your availability? \_\_\_\_\_


**Section 1: Electronics Theory – Basics**


( \_\_\_ /45)

**1. Components:**

1. A **resistor** \_\_\_\_\_ **current flow** in a circuit:
  - closes;            opens;            opposes;            amps
2. This **means** that the path of the **current flow** is reduced:
  - True;            sometimes;            false;            never
3. The **value** of a **resistor** with the following numbers is how many ohms: **4.7k Ω**
  - 470 Ω;            47 Ω;            47 000 Ω;            4 700 Ω
4. **B B R O Y G B V G W** corresponds to what colours and what are their values?

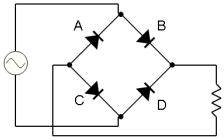
- \_\_\_\_\_
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- \_\_\_\_\_
- \_\_\_\_\_

5. The **value** of the **resistor** on the right is: 
  - 3K3 Ω;            33 Ω;            330 Ω;            3300 Ω

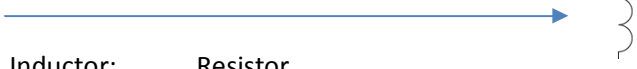
6. The **symbol** on the right **represents** a: 
  - Relay;            Capacitor;            Inductor;            Diode

7. A **diode** will **only conduct** in the correct polarity, meaning:
  - + to +;            + to -;            - to +;            anyway

8. We use **diodes** to **prevent**:
  - Heat spike;            Cold dip;            Shock wave;            Reverse current flow

9. The following picture on the right is a **representation** of: 
  - Full wave tunnel rectifier;            full wave bridge rectifier;

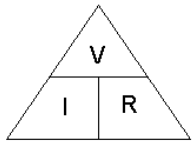
10. In question **9 above**, the device is made up of four:
  - Resistors;            Diodes;            Capacitors;            Relays

11. We use this device to **primarily convert** from:
- AC to AC;      DC to AC;      DC to DC;      AC to DC;
12. The picture on the right represents a: 
- Diode;      Capacitor;      Inductor;      Resistor
13. We use this type of component in these type of devices in our jobs:
- Strike locks;      Access Doors;      Magnetic Locks;      Sounders
2. In an electrical circuit, **voltage**:
1. Is applied across a circuit;      flows through a circuit;      is the same electrical point
3. The **unit** of measurement of **voltage** is:
1. Ohms;      Amperes;      Volts;      Coulombs
4. They **symbol** of the unit of measurement of **voltage** is:
1. C;      V;      A;       $\Omega$
5. What are the **basic types** of **voltages** commonly used?
1. Inverted Voltage;      Direct Voltage;      Alternating Voltage;      Capacitor
6. How does **current apply** in a circuit?
1. Is applied across a circuit;      flows through a circuit;      open circuit
7. How many **types** of **current** are commonly used?
1. Reactive Current;      Alternating Current;      Invertor Current;      Direct Current
8. The **symbol** for **current** is:
1. V;      R;      I;      P
9. They **symbol** of the unit of measurement of **current** is:
1. C;      V;      A;       $\Omega$
10. What **symbol(s)** represent the **current** in **Question 7**?
1. AC;       $V_{DC}$ ;      BC;      DC
11. **Current** is *defined* as the **rate of flow** of:
1. Volts;      Amps;      Charge;      Coulomb
12. The **unit** if measurement of **charge** is:
1. Volts;      Amps;      Charge;      Coulomb
13. What are the basic types of charges that make up current?
1. Ionic;      Voltaic;      Salt Bridge;      Electron
14. When *current flows* in a **conductor**, **energy** is released in the **form** of:
1. Sound;      Heat;      Light;      Distance

15. The **result** of the **flow of current** in an **undersized conductor** is:
  1. Dangerous; Good; Not a problem; Normal
16. A simple method of **over current protection** in a circuit is to use a:
  1. Fuse; Diode; Resistor; LED
17. The **opposing force** to the flow of **current** is:
  1. Voltage; Current; Resistance; Power
18. They **symbol** for **resistance** is:
  1. P; I; R; V
19. The **unit** of measurement for **resistance** is:
  1. Amperes; Volts; Ohms; Coulombs
20. They **symbol** of the unit of measurement of **resistance** is:
  1. C; V; A;  $\Omega$
21. The **supply voltage** is referred to as:
  1. Voltage Drop; Electro Moto Force; Current; Watts
22. The **voltage across two points** is referred to as:
  1. Potential difference; Induced current; Capacitive Voltage

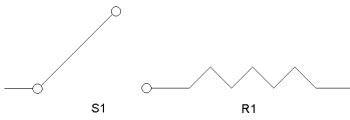
**Section 2: Electronics Theory – Application**

( \_\_\_/35)

1. The diagram on the right represents the relation of: 
  - $P=V \times I$ ;  $R_{TOT}=R_1 + R_2$ ;  $V=I \times R$ ;  $V_{SUP}=V_1 +V_2$

2. The purpose of a power supply unit is to be what type of electrical source for a circuit?
  - Frequency; Energy; Temperature; Speed

3. A series circuit is when current flows through \_\_\_\_\_ component of a circuit:
  - Some; Most; Each; Few

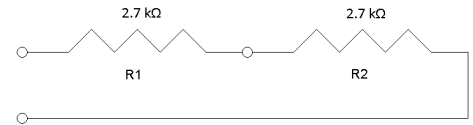
4. The picture on the right represents the following: 
  - S1 in series with R1; S1 in parallel with R1; Neither

5. If we have to write an equation to represent the above circuit, it could be like:
  - S1 OR R1; S1 AND R1; S1+R1; S1=R1

6. In **Question 5 above**, the present condition of switch S1 is:
  - Closed; Double throw; Open; Contact

7. The two resistor configuration on the right is of a \_\_\_\_\_ circuit:

- Parallel;      Open;      Series;      Closed



8. This circuit in **Question 7 above** has a total resistance can be written as:

- $R_{TOT}=(R1 \times R2)/(R1 + R2)$ ;       $R1 \text{ OR } R2$ ;       $R_{TOT}=R1 + R2$ ;       $R1 \text{ AND } R2$

9. In **Question 7 above**, the value of the above resistance is:

- 1.35k Ω;      2.7k Ω;      4.4k Ω;      5.4k Ω

10. In **Question 7 above**, the circuit represented is a \_\_\_\_\_ circuit:

- 12Vac;      12Vdc;      24Vac;      None of the above

11. In **Question 7 above**, the voltage across R1 is:

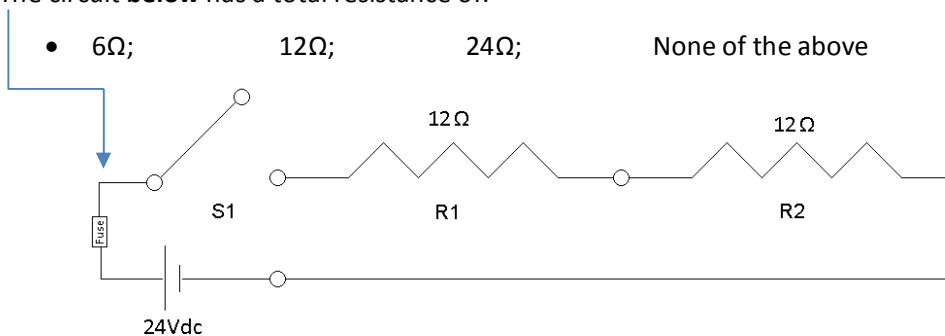
- 12Vac;      12Vdc;      24Vac;      None of the above

12. In **Question 7 above**, the voltage across R2 is:

- 12Vac;      12Vdc;      24Vac;      None of the above

13. The circuit **below** has a total resistance of:

- 6Ω;      12Ω;      24Ω;      None of the above



14. In the circuit of **Question 13 above**, the supply voltage is:

- 12Vac;      12Vdc;      24Vac;      24Vdc

15. In the circuit of **Question 13 above**, the current in the circuit will be:

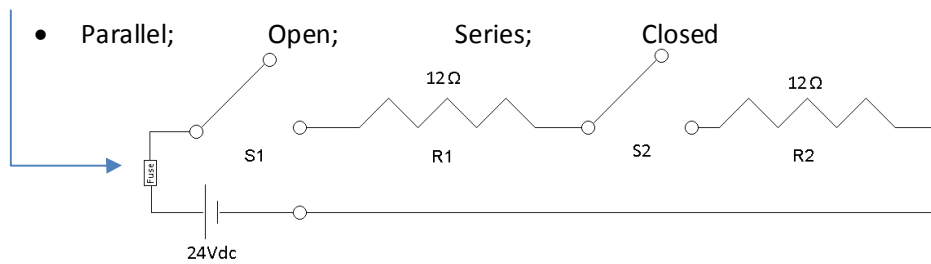
- 0.5A;      4A;      1A;      2A

16. In the circuit of **Question 13 above**, the current above will only flow in the circuit when S1 is in the \_\_\_\_\_ position:

- Closed;      Double throw;      Open;      Contact

Please turn over or proceed to the next page for Question 17

17. The circuit below is of the following type:



18. In the circuit of **Question 17 above**, the circuit above can have a total resistance of:

- 6Ω;              12Ω;              24Ω;              None of the above

19. In the circuit of **Question 17 above**, the current in the circuit will be:

- 0.5A;              4A;              1A;              2A

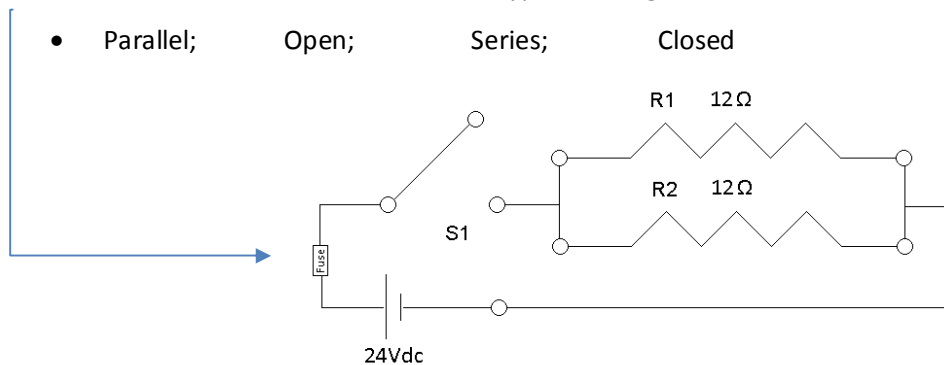
20. In the circuit of **Question 17 above**, the current above will only flow in the circuit when S1 is in the \_\_\_\_\_ position:

- Closed;              Double throw;              Open;              None of the above

21. If your answer for **Question 20** is “None of the above”, then when will current flow?

- S2 is closed;      S1 AND S2 is closed;      S1 is closed

22. The circuit below has the resistors in what type of configuration?



23. In the circuit of **Question 22 above**, the circuit resistance can be written as:

- $R_{TOT}=(R1 \times R2)/(R1 + R2)$ ;      R1 OR R2;       $R_{TOT}=R1 + R2$ ;      R1 AND R2

24. In the circuit of **Question 22 above**, the circuit above will have a total resistance of:

- 6Ω;              12Ω;              24Ω;              None of the above

25. In the circuit of **Question 22 above**, the current in the circuit will be:

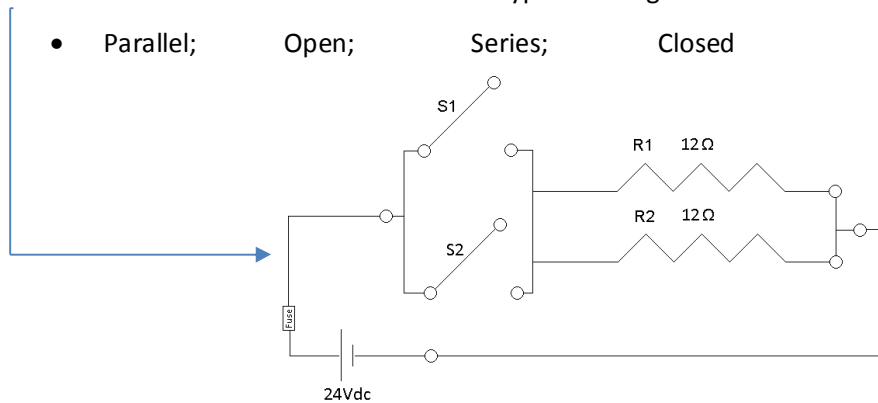
- 0.5A;              4A;              1A;              2A

26. In the circuit of **Question 22 above**, the current above will only flow in the circuit when S1 is in the \_\_\_\_\_ position:

- Closed;              Double throw;              Open;              None of the above



27. The circuit below has the switches in what type of configuration?



28. In the circuit of **Question 27 above**, the circuit resistance can be written as:

- $R_{TOT}=(R1 \times R2)/(R1 + R2)$ ;      R1 OR R2;       $R_{TOT}=R1 + R2$ ;      R1 AND R2

29. In the circuit of **Question 27 above**, the circuit above will have a total resistance of:

- 6Ω;      12Ω;      24Ω;      None of the above

30. In the circuit of **Question 27 above**, the current in the circuit will be:

- 0.5A;      4A;      1A;      2A

31. In the circuit of **Question 27 above**, the current above will only flow in the circuit when S1 is in the \_\_\_\_\_ position:

- Closed;      Double throw;      Open;      None of the above

32. If your answer for **Question 31** is “None of the above”, then when will current flow?

- S2 is closed;      S1 AND S2 is closed;      S1 is closed

33. In the circuit of **Question 27 above**, the above circuits, when a switch is open, the voltage across the switch will be:

- 12V;      6V;      24V;      0V

34. When the same switch is closed, the voltage will be:

- 12V;      6V;      24V;      0V

35. Why will the voltage across the two points of the switch be the value in **Question 34**?

- Is applied across a circuit;      flows through a circuit;      is the same electrical point

END