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| **Benha University**  **Faculty of Engineering at Shoubra**  **Energy Engineering Dep.** | Benha Logo | **Mid Term Exam (Fall 2018)**  **Date: Monday (19/3/2018)**  **Subject: Electronic Engineering**  **Duration: 1 hour** |
| * **Answer all the following questions** | | * **No. of questions : 2** * **Total Mark: 30 Marks** |

***Question (1) (15 Marks)***

1. Give one application for: (**Diode, Zener diode**, **LED**) **(3 marks)**
2. The ideal diode acts as...…........ In forward connection and acts as …….....….. For reverse. **(2 marks)**
3. Practical diode acts as...…........ In forward connection and acts as …….....….. For reverse. **(2 marks)**
4. Silicon diode need …..V to operate while Germanium diode require ………V to operate.  **(2 marks)**
5. What diode is similar to zener diode when it connected in forward? **(1 marks)**
6. Zener diode **5V**, mean that it is battery of ……. In forward and battery of ……. In reverse.  **(2 marks)**
7. Sketch the block diagram of a **5**v ***power supply*** and show the waveform after each block.  **(3 marks)**

***Question (2) (15 Marks)***

1. Determine and sketch the peak value of the output voltage and PIV for the circuit in Fig. **1**.
2. Calculate the current through 48 Ω in the circuit shown in the Figure (**2**). Assume all diodes to be ideal.
3. A zener diode used as a regulator at 6.2V, connected in shunt regulation with unknown **RL**. If the DC input was 5V and the **Rs**= 10 Ω, calculate the value of the **RL** that makes the power dissipated through the **Rs** be 1W.

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| Fig. 1 | Fig. 2 |
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