

**Benha University**  
**Faculty of Engineering (at Shoubra)**  
**Electrical Engineering Department**  
**Pre-Master**  
**Subject: Scientific Writing - ENG 508**



**Fall Semester**  
**Final Exam**  
**Date:** Saturday 29/12/2018  
**Duration:** 3 hours  
**N<sup>o</sup> of Questions:** 6 in 2 pages  
**Total Marks:** 60

Attempt all the following questions:

## Part I:

### Question 1:

(10 Marks)

Give a brief discussion for writing abstract, literature review, conclusion and references in a scientific thesis?

#### Answer:

#### References

- cite all ideas, concepts, text, data that are not your own
- if you make a statement, back it up with your own data or a reference
- all references cited in the text must be listed
- cite single-author references by the surname of the author (followed by date of the publication in parenthesis)
- refer to website, text books, paper and conference
- it must be updated

#### Abstract

- A good abstract explains in one line why the paper is important. It then goes on to give a summary of your major results, preferably couched in numbers with error limits. The final sentences explain the major implications of your work. A good abstract is concise, readable, and quantitative. Length should be 1 paragraph, approx.150 words.

#### Conclusions

- The purpose of this chapter is to give summary of the whole thesis.
- from 3 -5 pages
- Do not repeat statement from the abstract, introduction or discussion.

## Question 2:

(10 Marks)

Explain the planning for preparing a scientific thesis.

Mention the recommended number of chapters and the contents for each of them.

### Answer:

Planning for preparing

- Begin with the end in mind
- The ability to accurately describe ideas, protocols/procedures, and outcomes are the pillars of scientific writing.
- Use figures and graphics.
- Avoid Plagiarism and inadvertent lack of citations.
- It consists of 5 chapter:
  - 1- Introduction
  - 2- Literature review
  - 3- Purposed System (work)
  - 4- Results
  - 5- conclusion

### Question 3:

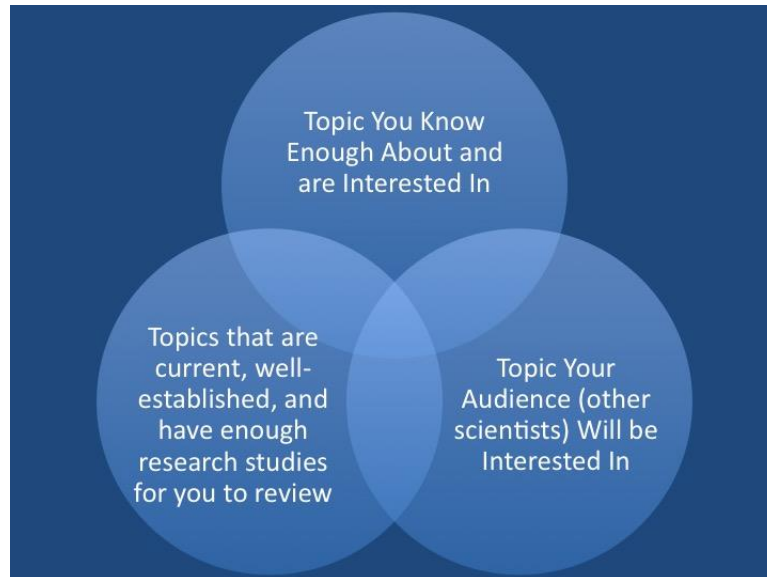
(10 Marks)

If you are the supervisor of one M.Sc. student. Write the proposal for research plan for this student in one or two pages.

#### Answer:

##### - Choosing a Topic

If you need to write a review article but don't know where to start, keep some of these tips in mind.



Your review should follow the following structure:

- Abstract
  - Write this last
  - A summary of your main thesis and the studies you examine in your review
- Introduction
  - Introduce your topic
  - Outline what you will discuss throughout the review
  - Frame the paper with your thesis
  - Tell your audience why it is important that you reviewed the literature in your topic area
- Body
  - Can take different forms depending on your topic
  - Break it up into sections if this is helpful (i.e. if you are studying three different methodologies, then you can break your body into three main sections)
  - Go through all of the literature in detail, in an organized fashion
- Discussion/Conclusion
  - Restate your thesis
  - Wrap up your review by drawing everything together and making sure it is clear what conclusions you draw about your topic or field of study based on the research studies you read and analyzed.
- References
  - Make sure your references are formatted correctly and all present

- This paper is all about the references! Cite everything that you discuss. For tips on when and how to cite, visit the next page on the drop-down menu under "Writing in the Sciences!"

## Part II:

### Question 4:

(8 Marks)

- a. (2 Marks) What is Latex?

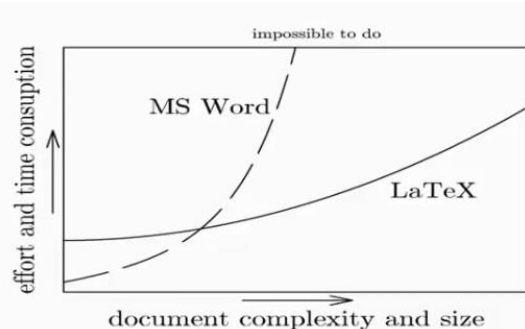
**Answer:** Latex is a document preparation system for high-quality typesetting. It is often used for medium to large technical or scientific documents but it can be used for almost any form of publishing.

It encourages authors not to worry too much about the appearance of their documents but to concentrate on getting the right content.

- b. (2 Marks) What are the benefits of using Latex when compared to MS Word?

You should support your answer by a figure.

**Answer:**



- **Small files.**
- **Cross-platform compatibility.**
- **Easy to make templates.**
- **FREE.**

- c. (2 Marks) What are LaTeX packages?

**Answer:** Packages are extensions of Latex that add functionality. It has the ability of adding figures or additional commands for mathematical symbols.

The Latex packages are two file types:

class files .cls extension, and style files with .sty extension

The command `\usepackage` tells Latex to load a package options.

Options are enclosed in square braces.

- d. (2 Marks) How to import data from EXCEL tables into Latex?

**Answer:** 1 step: In Excel: File -> Save As -> Tab Delimited Text (data.txt)

2 step: In Latex: LOAD the file (data.txt) and FORMAT by using convenient package `PgfplotsTable`

### Question 5: Complete the following sentences:

(8 Marks)

1. You can use the option **`[round]`** when using the package `natbib` to make the reference in the text look like this (2016) instead of this [2015].
2. To add a new line, you use **`\.`**
3. To make the text bold, you use the command **`\textbf{text}`**.



4. The title and the author of an article are written in a part after the document class and before the begin document called **preamble**.
5. The extension of the latex file is **.tex**.
6. The tools needed to write a latex file are **compiler** and **editor**.
7. Latex supports two types of lists: **enumerate** produces numbered lists, while **itemize** is for bulleted lists.
8. You can **label** any of the sectioning commands so they can be referred to in other parts of the document.

**Question 6:**

**(14 Marks)**

a. (6 Marks) Write Latex commands the will produce each of the following outputs:

<p>i. (2 Marks)</p> <ol style="list-style-type: none"> <li>1. Electrical Engineering <ul style="list-style-type: none"> <li>• Communication</li> <li>• Computer Systems</li> </ul> </li> <li>2. Civil Engineering</li> <li>3. Mechanical Engineering</li> </ol> <p><b>Answer:</b></p> <pre>\begin{enumerate} \item Electrical Engineering \begin{itemize} \item Communication \item Computer Systems \end{itemize} \item Civil Engineering \item Mechanical Engineering \end{enumerate}</pre>	<p>ii. (2 Marks)</p> <p style="text-align: center;">Table 1: Results</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>IT</th> <th>Word</th> <th>Excel</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>40</td> <td>34</td> </tr> <tr> <td>80</td> <td>19</td> <td>80</td> </tr> </tbody> </table> <p><b>Answer:</b></p> <pre>\begin{table} \centering \caption{Results} \label{1} \begin{tabular}{ l c l } \hline IT &amp; Word &amp; Excel \\ \hline 100 &amp; 40 &amp; 34 \\ \hline 80 &amp; 19 &amp; 80 \\ \hline \end{tabular} \end{table}</pre>	IT	Word	Excel	100	40	34	80	19	80
IT	Word	Excel								
100	40	34								
80	19	80								

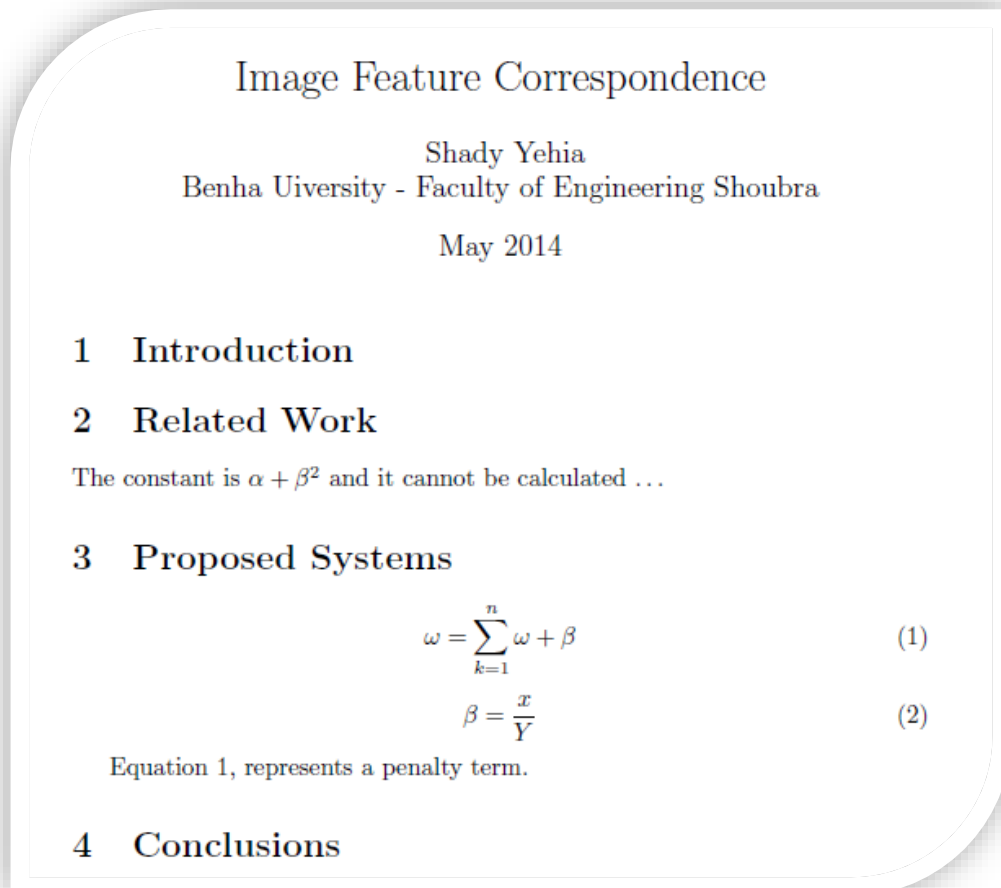
<p>iii. (2 Marks)</p> <div style="text-align: center;">  <p>(a)</p> </div>	<div style="text-align: center;">  <p>(b)</p> </div> <p style="text-align: center;">Figure 1: (a) Flowers. (b) Desert</p> <p><b>Answer:</b></p> <pre>\begin{figure} \centering \begin{subfigure}{0.45\columnwidth} \includegraphics[width = \textwidth]{desert.jpg} \caption{} </pre>
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```

\label {a}
\end{subfigure}
~
\begin{subfigure}{0.45\columnwidth}
\includegraphics[width = \textwidth]{flower.jpg}

```

- b. (8 Marks) Write a complete latex file that will produce the following outputs(paper):



**Answer:**

```

\documentclass {article}

\title {Image Feature Correspondence}
\author {\ Shady Yehia\
Benha University - Faculty of Engineering Shoubra}
\date{May 2014}

\begin{document}
\maketitle

\section {Introduction}
\section {Related Work}
The constant is $ \alpha + \beta^{2} $

```

and it cannot be calculated \ldots  
\section {Proposed Systems}

```
\begin{equation}
\label {term}
\omega = \sum_{k=1} ^{n} \omega + \beta
\end{equation}
```

```
\begin{equation}
\label {frac}
\beta = \frac {x} {Y}
\end{equation}
```

Equation \ref{term}, represents a penalty term.

\section {Conclusions}

\end{document}

Good Luck