

IT Workshop Internal Exam - Set 2

Question 1: Answer any 2 of the following 3 questions. Time: 2 hours. Full marks 30

July 2024

1 Document Structure

LaTeX is a high-quality typesetting system that includes features designed for the production of technical and scientific documentation. It is widely used in academia for the communication and publication of scientific documents in many fields, including mathematics, computer science, engineering, physics, chemistry, economics, and political science.

1.1 Font Styles

Here are some examples of different font styles in L^AT_EX:

- **Bold text**
- *Italic text*
- Underlined text
- ~ - Tilde
- ^ - Caret
- \ - Backslash

1.2 Special Characters

LaTeX allows you to include special characters such as:

- # - Hash
- \$ - Dollar sign
- % - Percent sign
- & - Ampersand
- _ - Underscore
- { - Left curly brace
- } - Right curly brace

1.3 Including Figures

To include figures, you first need to upload the image file named sample-image from your computer using the upload link in the file-tree menu. Then use the include graphics command to include it in your document

1.4 Creating Tables

Here is an example of creating a table in L^AT_EX:

| Country | Primary Education | Secondary Education | Higher Education |
|---------|-------------------|---------------------|--------------------|
| USA | Grades 1-5 | Grades 6-12 | College/University |
| UK | Years 1-6 | Years 7-13 | College/University |
| India | Grades 1-5 | Grades 6-12 | College/University |

Table 1: Comparison of Basic Education Systems

1.5 Mathematical Expressions

LaTeX excels at typesetting mathematics. Here is the quadratic formula inline:
 $ax^2 + bx + c = 0$.

Displayed version:

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix} \begin{pmatrix} e & f \\ g & h \end{pmatrix} = \begin{pmatrix} ae + bg & af + bh \\ ce + dg & cf + dh \end{pmatrix}$$

Definite Integral:

$$\int_0^1 x^2 dx = \left[\frac{x^3}{3} \right]_0^1 = \frac{1}{3}$$

1.6 Lists

You can make lists with automatic bullet points:

- First item (apple)
- Second item (banana)
- Third item (cherry)

You can also use numbered lists with colored text:

1. Blue
2. More blue
3. And red!
4. This is green color



Figure 1: This is a sample image.

1.7 Hyperlinks

For more information, visit the LaTeX project website.

1.8 Bibliography

To include references, you can use BibTeX. Here is an example citation: [1].

References

[1] John Doe, *An example article*, Journal of Examples, 1(1):1–2, 2024.