Topic

⇒ Explanation of document class options :-

Document class options :- size, fleqn, legno, titlepage, nontitlepage, two-column, twoside, oneside, landscape, open-right, open-any, draft.

→ Size :- 10pt, 11pt, 12pt sets the size of the main font in the document. If no option is specified, 10pt is assumed.

→ a4 paper, letterpaper :-

Defines the paper size. The default size is letter paper, However, many European distributions of TeX now come pre-set for A4, not letter, and this is also true of all distributions of pdf later. Beside that, a5 paper, b5 paper, executive-paper, and legal paper can be specified.

→ fleqn :- Type sets displayed formulas left-aligned instead of centered.

formula length
formula
eq'n
center
left aligned eq'n center or right.

→ legno :- places the numbering of formulas on the left hand side instead of the right.

→ titlepage, nontitlepage :- specifies whether a newpage should be started after the document title or not.

The article class does not start a new page by default, while report and book do.

→ twocolumn :- Instructs latex to typeset the document in two columns instead of one.

→ landscape :- changes the layout of the document to print in landscape mode.

→ twoside, oneside :-

Specifies whether double or single sided output should be generated. The classes article and report are single sided and the book class double sided by default note that this option Concerns the style of the document only.

→ The option twoside does not tell the printer you use that is should actually make a two-sided printout.

→ openright, openany :-

makes chapters begin either only on right hand pages or on the next page available. This does not work with the article class, as it does not know about chapters.

→ The report class by default starts chapters on the next page available and the book class starts them on right hand pages.

→ draft :-

Makes latex indicate hyphenation and Justification problems with a small square in the right-hand margin of the problem line so they Can be located quickly by a human. it also Supresses the inclusion of images and shows only a frame where they would normally occur.

Topic

⇒ Packages :-

⇒ Introduction to packages :-

If you define a lot of new environments and Commands, the preamble of your document will get quite long. In this situation, it is a good idea to create a Latex package containing all your Command and environment definitions.

Syntax :-

\usepackage{package-name}

Example :-

1. \usepackage{amsmath}
2. \usepackage{graphicx}
3. \usepackage{array}

→ Some of the list packages given below :-

⇒ package names :-

1) inputenc :- To choose the encoding of the input text. you might need it if you are coriting documents in a language other than English.

2) Amsmath :- It contains the advanced math extensions for latex. the complete documentation should be in your latex distribution, the file is called amsdoc, and can be dvi or pdf.

3) Amssymb :- It adds new symbols in to be used in math mode.

4) array:- It extends the poibility of latex to handle tables, fixing some bugs and adding new features. using it, you can create very complicated and customized tables.

5) Graphicx:- Allows you to insert graphics files within a document.

6) mhchem:-
Allows you to easily type chemical species and equations. It automatically formats chemical species so you don't have to use subscript commands. it also Allows you to draw chemical formulas.

7) Geometry:-
For easy management of document margins and the document page size.

8) wrapfig:- Allows figures or tables to have text wrapped around them

9) Enumitem:- Adds support for arbitrarily - deep nested lists (useful for outlines).

10) Multirow:- Create tabular cells spanning multiple rows.

11) colour:- the color package provides both foreground (text, rules, etc). and back-ground colour management, it uses the device driver configuration mechanisms of the graphics package to determine how to control its output.

12) Tabu:- flexible LaTeX tabulars.

13) chemfig:- Draw molecules with easy syntax.

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⇒ AMS packages :-

⇒ ams math, ams-fonts, ams symb :-

→ amsmath It contains the advanced math extensions for latex. The complete documentation should be in your latex distribution; the file is called ams.doc.

→ ams font to apply font styles in mathematical functions.

→ ams symb It adds new symbols in, to be used in math mode.

Ex:-

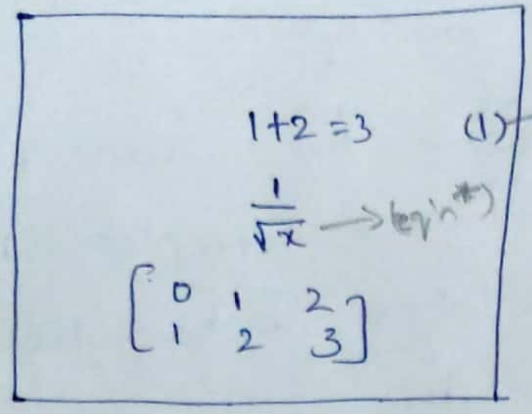
```
\documentclass[10pt,onecolumn]{Article}
\usepackage{amsmath}
\usepackage{amsfonts}
\usepackage{amssymb}
\begin{document}
    \begin{equation}
        1+2 = 3 \\
    \end{equation}\\
    \begin{equation*}
    \frac{1}{\sqrt{x}} \\
    \end{equation*}\\
    $ \left[
    \begin{matrix}
        0 & 1 & 2 \\
        1 & 2 & 3 \\
    \end{matrix}\right] $ \\
\end{document}
```

(ams packages.)

(eq'n numprint)

(eq'n nonumprint)

out put



Ex:- ② ams math, ams font ams symb (american mathematical society)

```
\documentclass[12pt]{article}
\usepackage{amsmath}
\usepackage{amsfonts}
\usepackage{amssymb}
\begin{document}
\begin{equation}
  1 + 2 = 3
\end{equation}
\begin{equation*}
  1 := 3 - 2
\end{equation*}
\begin{align*}
  1 + 2 &= 3 \\
  1 &= 3 - 2 \\
\end{align*}
```

(space, Nospace, Nospace)

```
f(x) $$ = \frac{1}{x}$$
F(x) $$ = \int^a_b$$
```

space print (tab) variation

```
\frac{1}{3} x^3 $$
\frac{1}{\sqrt{3}} $$
\end{align*}
\end{document}
```

output

$$1 + 2 = 3 \quad (1)$$

$$1 = 3 - 2$$

$$1 + 2 = 3$$

$$1 = 3 - 2$$

$$f(x) = x^2$$

$$g(x) = \frac{1}{x}$$

$$F(x) = \int_b^a \frac{1}{3} x^3$$

$$\frac{1}{\sqrt{3}}$$

— o —

TOPIC ⇒ geometry :-

For easy management of document margins and the document size.

Ex :-

```
\documentclass{article}
\usepackage[textwidth=10cm]{geometry}
\begin{document}
```

package option name

change text size margins

This document assembles. the margins to manage.

text

```
{\fontfamily{pag}
\selectfont
```

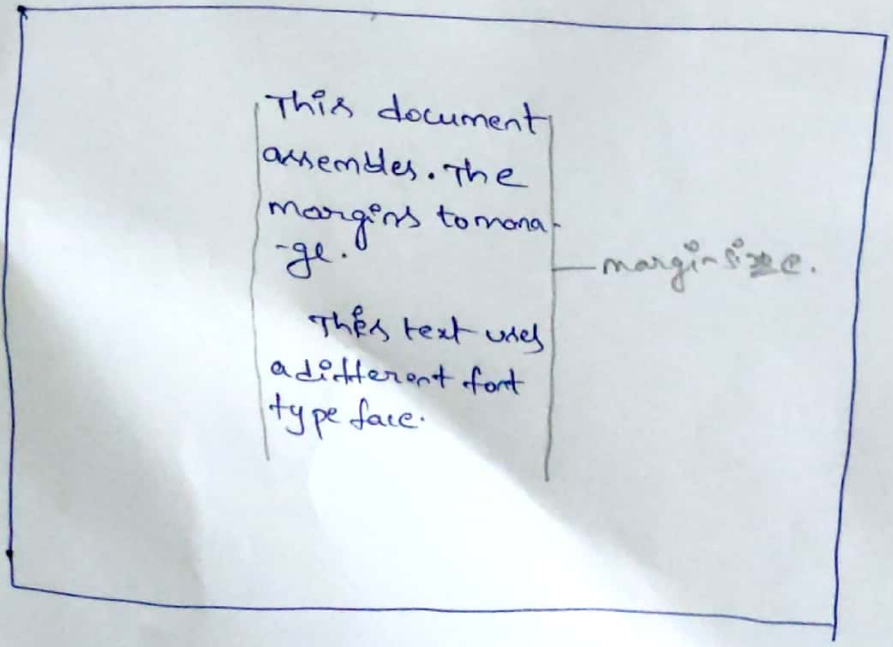
style

This text uses a different font typeface}

text

```
\end{document}
```

Output

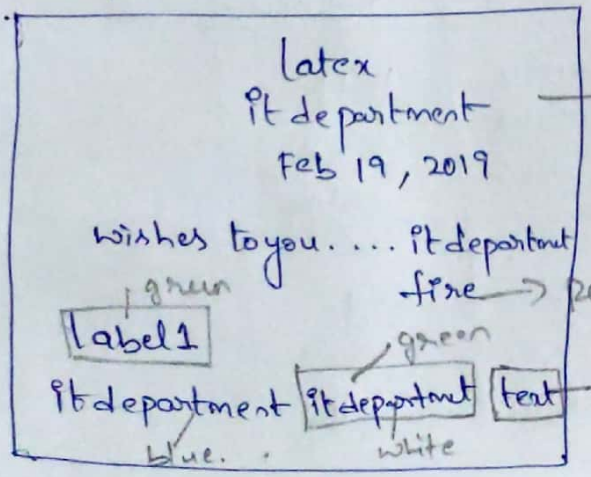


Topic

color :-

```
\documentclass[a4paper, 12pt]{article}
\usepackage{color}
\begin{document}
\title{latex}
\author{it department}
\maketitle
\pagecolor{yellow}
wishes to you..... it department
\color{red} fire\\
\colorbox{green}{label1}-\\
{\color{blue} it department}
\colorbox{green}
{\color{white} it department}
\fcolorbox{red}{yellow}{text}
\end{document}
```

output



TOPIC
⇒ Multi row :-

```
\begin{document}
  \begin{tabular}{|c|c|c|c|}
  \hline
  Section & id & name & distrinct \\
  \hline
  \multirow{3}{4em}{b1-pucl} & 102 & Ramu & kdp \\
  & 103 & rahul & nzv \\
  & 104 & rakhi & sklm \\
  \hline
  b2-pucl & 201 & krishna & ong \\
  \hline
  b3-pucl & 301 & karthik & rkvally \\
  \hline
  \end{tabular}
\end{document}.
```

1 em = 3.51 mm
1 cm = 0.35 cm

Output

Section	id	name	district
b1-pucl	102 103 104	ramu rahul rakhi	kdp nzv sklm
b2-pucl	201	krishna	ong
b3-pucl	301	karthik	rkvally

Topic

Multi column :—

```
\documentclass{article}
\usepackage[utf8]{inputenc}
\begin{document}
\begin{tabular}{|p{3cm}||p{3cm}|p{3cm}|p{3cm}|}
\hline
\multicolumn{4}{|c|}{country list} \\
\hline
Name & id & city & distrinct \\
\hline
akhil & 1 & tpt & chitoor \\
\hline
arun & 2 & kdp & ysr kadapa \\
\hline
\multicolumn{4}{|c|}{rgukt list} \\
\hline
rkvalley & \multicolumn{2}{|c|}{nuzvid} &
ap \\
\hline
\multicolumn{2}{||c||}{ongole} & sklm
& basara \\
\hline
\end{tabular}
\end{document}
```

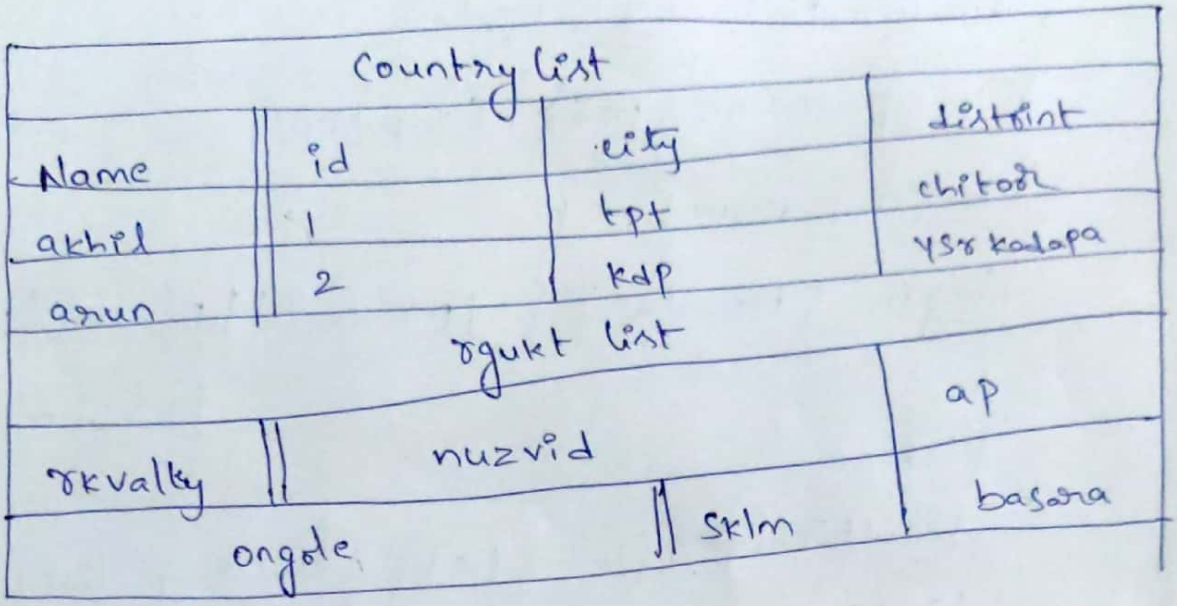
package name

ascii code conversion package

space

column size

output



⇒ TIKZ
⇒ chemfig } pending.