Roll No. ☐☐☐☐☐☐☐☐

S. No. of Question Paper : **2136**

Unique Paper Code : **32353301**   **GC-3**

Name of the Paper : **Latex and HTML**

Name of the Course : **B.Sc. (Hons.) Mathematics—CBCS : Skill Enhancement**

Semester : **III**

Duration : **2 Hours**   Maximun

(Write your Roll No. on the top immediately on receipt of this question paper.

All questions are compulsory.

1. Fill in the blanks :

    (*i*)   In LaTeX, items can be listed using .... environment.

    (*ii*) Line breaks in a LaTeX document are produced by ....

    (*iii*) .... command is used to give comments in a latex docu:

    (*iv*) .... command is used to draw a circle with center (x, y)

        r in pstricks.

    (*v*)   .... attribute of the img tag in HTML is used to specify

        of the image.

2. Answer any *eight* parts from the following :

    (*i*)   Give the command in LaTeX to obtain the expression $\left(\dfrac{a+b}{x+y}\right)^{\frac{1}{3}}$.

(ii)   Write the difference between the commands \vdots and \ddots.

(iii)   Write the output of the command :

$\frac{d}{dx}\left(\int_{0}^{x}f(t)\, dt\right) = f(x)$.

(iv)   What is wrong with the following HTML construction :

<p> This is   bold and italics </p> .

(v)   Give any *three* attributes of the *font* tag in HTML.

(vi)   What is wrong with the following input :

<p> Also checkout the

 University of Delhi </p>

(vii)   Write a code in LaTeX for typesetting $\lim_{n\to\infty}\left(1 + \frac{1}{n}\right)^{n} = e$.

(viii) Write a LaTeX code to produce $\mathbb R$ in the output.

(ix)   Write the command in LaTeX to generate the expression $x^{x^{x^{x}}}$.

(x)   What is the output of the command \psarc(1, 1) {2} {0} {70} in pstricks.

3. Answer any *five* questions from the following :   5×5=25

(i)   Write the code in LaTeX to plot the curves $y = \sqrt{x}$ and $y = x^2$ on the same

coordinate. Show the square root function as a dotted curve and the square function

as a dashed curve.

(*ii*) Find the errors in the following LaTeX source, write a corrected version a its output :

> \Documentclass{article}
>
> \usepackage{amsmath}
>
> \begin{document}
>
> We have following options
>
> \begin{itemize}
>
> \item $$x\ge y$
>
> \item $x\le y$
>
> \item x=y
>
> \end{document}

(*iii*) Write a code in LaTeX for typesetting the following expression :

$$\frac{\dfrac{5}{a^2b} - \dfrac{2}{ab^2}}{\dfrac{3}{a^2b^2} + \dfrac{4}{ab}} = \frac{\dfrac{5b - 2a}{a^2b^2}}{\dfrac{3 + 4ab}{a^2b^2}}.$$

(*iv*) Write a code in LaTeX to typeset the following :

A system of linear equations in 3 variables x_1, x_2 and x_3 can be represer

$$\begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} = \begin{pmatrix} 2 \\ 3 \\ 4 \end{pmatrix}.$$

(v) Write LaTeX code in beamer to prepare the following presentation :

Slide 1

```
                My Presentation

                     XYZ

               November 2, 2016




   XYZ        My Presentation    November 2, 2016
```
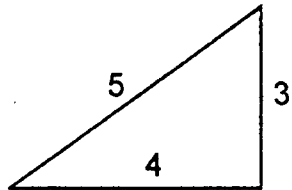
Slide 2

```
  Pythagoras Theorem



   In a right angled triangle the square of the hypotenuse is equal
   to the sum of the squares of the perpendicular and base.




   XYZ        My Presentation
```

Slide 3

Example

Example
This is a right angled triangle in which $5^2 = 4^2 + 3^2$

XYZ　　My Presentation　　November 7, 2016

Slide 4

Thank You

XYZ　　My Presentation　　November 7, 2016

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(vi) Write an HTML code to generate the following web page :

University of Delhi

Colleges of Delhi University offering BBA/BBE/BFIA programmes at the undergraduate level

- North Campus
  1. Shivaji College
     - (a) BMS
     - (b) BBA

  2. DDU College
     - (a) BBE
     - (b) BMS
- South Campus
  1. Gargi College
     - (a) BFIA
     - (b) BBE

Keep the following in mind while writing the code :

(i) Font face for the text should be Arial.

(ii) Text color of the main heading should be blue.

(iii) Rest of the text should be in purple.