

(b) Explain the command `\qbezier(10, 20) (20, 30) (25, 20)` and draw its figure.

(c) Write the code in LaTeX to produce the matrix :

$$\begin{pmatrix} 1 & 0 & \dots & 0 \\ 0 & 1 & \dots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & 1 \end{pmatrix}$$

(d) Draw an output of the following commands :

(i) `\put(20, 0){\circle{20}}`

(ii) `\put(50, 0){\circle*{5}}`

4. Write a presentation containing in beamer with the following content :

Title of the presentation with author and date, the list of three chapters :

Getting started with LaTeX, PStricks and Beamer, respectively on different slides, including one definition from each chapter. 8

This question paper contains 4 printed pages]

29/11/18

Evening

Roll No.

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S. No. of Question Paper : 1347

Unique Paper Code : 62353326

I

Name of the Paper : Mathematical Typesetting System :

LaTeX—NC

Name of the Course : B.A. (Programme) Mathematics :

Skill Enhancement

Semester : III

Duration : 2 Hours

Maximum Marks : 38

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

All questions are compulsory.

1. Fill in the blanks; any four parts from the following :  $4 \times 0.5 = 2$

(i) In LaTeX, ..... command is used to get text in italics.

(ii) ..... command is used to start new line in TeX document.

(iii) In LaTeX, ..... command is used to begin a section.

(iv) ..... command produce  $\dot{O}$  in LaTeX.

(v) ..... command puts a horizontal line above its argument.

2. Answer any *eight* parts from the following :  $8 \times 2 = 16$

(i) Explain *four* ellipsis command in LaTeX, which one works in any mode.

(ii) Write the code in LaTeX to obtain the expression :

$$\int_a^b f'(x) dx = f(b) - f(a).$$

(iii) Illustrate the difference between enumerate and itemize environments by giving an example.

(iv) Write the LaTeX code for the following expression :

$$\frac{x+y}{1+\sqrt{\frac{y}{z+1}}}.$$

(v) Give the command in LaTeX to type :

$$\mathbf{N \subset Z \subset Q \subset R \subset C.}$$

(vi) Write a code in LaTeX to produce :

$$\int_0^{\pi} x \sin x dx = \int_0^{\pi} (\pi - x) \sin x dx$$

$$\therefore \int_0^{\pi} x \sin x dx = \pi.$$

(vii) Give the command in LaTeX to produce an output :

$$\frac{\pi}{4} = 1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \dots$$

(viii) Write a code in LaTeX to produce an output :

$$z = \begin{cases} y & \text{if } y > 0 \\ x+y & \text{otherwise.} \end{cases}$$

(ix) Write the following postfix expression in standard form :

x sqrt x 2 exp add 1 x sub div.

(x) Give a command to draw sector of a circle of radius 1.5 centered at (2, 2), going from reference angle 0 to 45 degrees.

3. Answer any *three* parts from the following :  $4+4+4=12$

(a) Write the code in LaTeX to plot the curves  $y = \sqrt[3]{|x|}$  as dotted curve and  $y = x^3$  as dashed curve in the same coordinate system.