Unique Paper Code	:	62353326_OC
Name of the Paper	:	SEC-Mathematical Typesetting System
Name of the Course	:	B.A. (Prog.) CBCS Skill Enhancement Course
Semester	:	III
Duration	:	3 Hours
Maximum Marks	:	38Marks

Instructions for Candidates

Attempt any four questions. All questions carry equal marks.

1 (i) What is wrong with the following LaTeX input? What is the correct way to do it?

If m=1 and n=2, then m+n=3

(ii) Which command is used to draw a circle with center(x, y) and radius r.

(iii) What is the output of the command

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

(iv) In beamer, frames are made with a which command ?

(v) Write a code in LaTeX to get the following: if $x < y - 1$ then $x < y$

(vi) What is the output of the command $y=\sqrt{x}$.

(vii) What is the difference between "itemize"and "enumerate" environment.

2(a) Write the command in LaTeX to obtain the expression $e^{i\theta} = \cos\theta + i\sin\theta$.

(b) Explain the command \psarc[linewidth=0.1pt](1,1){2}{0}{70}.

(c) Typeset the following in LaTeX:

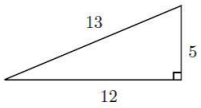
The *derivative* of a function *f*, denoted f', is defined by

$$f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}.$$

3(a) Write the command in PSTricks to draw the following picture

(b) Write the command in PSTricks to plot the function $y = \sin(1/x)$.

4(a) Write the command in PSTricks to draw the following picture



(b) Plot $y = \sqrt{x}\sin(1/x),\ \text{for}\ 0 < x \leq 2.$ On the same co-ordinate system, plot the functions $y = \sqrt{x}$ and $y = -\sqrt{x},\ \text{for}\ 0 \leq x \leq 2,$ with these functions shown as dotted curves.

5 (a) Write the code to make the following multi-line equations

$$\begin{aligned} 1+2 &= 3 \\ 4+5+6 &= 7+8 \\ 9+10+11+12 &= 13+14+15 \\ 16+17+18+19+20 &= 21+22+23+24 \\ 25+26+27+28+29+30 &= 31+32+33+34+35 \end{aligned}$$

(b) Write the code to typeset the following:

$$f(x) = \begin{cases} -x^2, & x < 0 \\ x^2, & 0 \leq x \leq 2 \\ 4, & x > 2 \end{cases}$$

6. Write a code to make a beamer presentation of 5 pages (including title and thank you page) on any topic with diagram/picture.

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