SECOND SEMESTER B.Sc. DEGREE EXAMINATION
MATHEMATICS (CORE COURSE)
MM2B02: INFORMATICS AND MATHEMATICAL SOFTWARES
Model Question Paper

Time: 3 hrs.   Maximum Weightage: 30

I. Objective type questions. Answer all 12 questions   (12 x ¼ = 3 weightage)

1. One ………………. is roughly equivalent to one million bytes of data.

2. A(n) ………….. is a temporary storage area that holds the data until CPU is ready for it.

3. A laser printers speed is measured in ………………..

4. A …………….. is a portion of a computer program being run by a CPU.

5. The command to list the file names inside a directory (folder) is ………………

6. A(n) ……………. is software you can use to navigate world wide web.

7. The result of $5 + 3* 10$ is …………….

8. The outputs of the two Python statements *print* '75'*5 and *print* 75*5 is …………..

9. The LATEX code to get $x = \dfrac{x_1^2}{\sqrt{y}}$ is …………

10. The difference between = and == operators in Python is ………….

11. The result of *print 'Hello' + 'World'* is …………….

12. The LATEX command used to draw a circle of radius 10 is …………….

II.   Short answer type questions. Answer all 9 questions   (9x1 = 9 weightage)

13. Explain the difference between single user and multi-user operating systems.

14. Write a Python *for loop* to print the characters in 'Hello World' one by one.

15. What is the syntax error in the following code?

    x=1

    while x¡=10:

    print x*5

16. Write the output of the program

    from pylab import*

    print linspace(-pi,pi,3)

17. What are the commands used for converting a .tex file to a .pdf file?

18. What is the LATEX code to get $\dfrac{\sin(x)}{\cos(x)}$?

19. Write Latex source code for generating $E = mc^2$.

20. What is the output of the following latex code?

    \begin{tabular} {|c|c|}

    \hline

    1&2\\

```
\hline
-4&5\\
\hline
\end {tabular}
```

21. Find out the mistake in the following python code.

    ```
    x = [4, -5, 3.6]
    y = -8.5
    z = (x**2)*y
    ```

III. Short essay or paragraph questions. Answer any 5 questions from 7

(5 x 2 = 10 weightage)

22. Explain the ownership and permission scheme of Unix/Linux operating system.

23. Write a Python program to open a file and write 'hello world' to it.

24. Express the following in latex

$$\sin(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \cdots\cdots$$

$$\cos(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \cdots\cdots$$

25. How does Latex differ from other word processor programms?

26. Write a Python program to print the product of two numbers read from keyboard.

27. How will you express Greek letters in latex?

28. Write Python code to plot a square wave using Fourier Series (three terms only)

IV. Essay questions. Answer any 2 questions from 3   (2 x 4 = 8 weightage)

29. Write a Python program to find annual compound interest. Get P, N and R from user?

30. Define the list [1, 2, 3, 4, 5, 6] using the range function. Write code to insert a 10 after 2, delete 4, add 0 at the end and sort it in the ascending order.

31. Write a Latex program to get the first page of this question paper.