

15720

(Pages : 3)

Name.....

Reg. No.....

SECOND SEMESTER B.Sc. DEGREE EXAMINATION, MAY 2011

(CCSS)

Mathematics

MM2 B02 – INFORMATICS AND MATHEMATICAL SOFTWARE

Time : Three Hours

Maximum : 30 Weightage

I. Objective Type Questions.

Answer all twelve questions.

Each bunch of four questions carries 1 weightage.

1. What are the essential hardware components of computer hardware?
2. How the real and imaginary parts of a complex number are extracted in Python?
3. What is the use of *range()* function in Python?
4. What is the Latex statement for the symbol Π ?

(4 × ¼ = 1 weightage)

5. Which are the magnetic storage devices used in computers?
6. How will you extract the last character of a string in Python?
7. What are the different methods to import a module in Python?
8. Which are the special characters used only in Latex commands?

(4 × ¼ = 1 weightage)

9. What does the term SCSI stand for?
10. What is a package in Python?
1. What is the use of *else* statement in a loop?
2. How will you move forcefully to a new page in Latex?

(4 × ¼ = 1 weightage)

II. Short Answer Type Questions.

Answer all questions. Each questions carries 1 weightage.

3. What is a client / server network?
4. Explain how a list is used as a stack in Python?
5. Describe with an example the *for* statement in Python?
6. Write a Python program to print the cubes of the first 10 natural numbers with the numbers right justified in their fields.

Turn over

17. What is the output of the following statements :

```
a = [28, -8, 0, -96, 45.8, 1001]
```

```
del a[0]
```

```
a.sort()
```

```
del a[2:4]
```

```
a.reverse ()
```

```
print a
```

18. Write the Latex statements for the equation $x = ((a - b) + (c - d)) / \sqrt{n}$.
19. What are the various output formats possible with Latex?
20. Write the Latex statement for the function $f(x) = 2\sin x - \cos^2 y + \tan xy$.

21. Write the Latex for the equation. $u = \frac{y + \frac{z}{2}}{x^2 y^2}$.

(9 × 1 = 9 weightage)

III. Short Essay Questions.

Answer any five questions.

Each question carries 2 weightage.

22. Distinguish between LAN and WAN.
23. Write a Python program to calculate the annual compound interest.
24. Write a Python program to find the standard deviation of the first n natural numbers.
25. Explain the use of pickle module in Python.
26. Write the output of the following Latex statements :

```
f(x) = \left\{ \begin{array}{rll} \end{array} \right.
```

```
-1 & \mbox{if} & x < 0; \ \
```

```
0 & \mbox{if} & x = 0; \ \
```

```
1 & \mbox{if} & x > 0. \ \
```

```
\ end{array}
```

```
\ right.
```

27. Write the Latex statements to create the function $f(x) = \begin{cases} -1, & \text{if } x < 0 \\ 0, & \text{if } x = 0 \\ 1, & \text{if } x > 0 \end{cases}$

28. What are the important document classes available in Latex?

(5 × 2 = 10 weightage)

IV. Essay Questions.*Answer any two questions.**Each question carries 4 weightage*

29. Write a Python program to evaluate $\cos(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \dots$
30. Write a Python program to read a list of integers and write the even and odd integers to two separate files.
31. Prepare a sample bibliography using Latex.

(2 × 4 = 8 weightage)