

MODEL PAPER

MCS-301 PYTHON PROGRAMMING

Time 3Hrs

Max. Marks 70

Answer Question No.1 Compulsory

7 x 2 = 14 M

Answer ONE Question from each unit

4 x 14 = 56 M

1.
 - a. How to declare and assign variables in python
 - b. What is List
 - c. Define container
 - d. explain top-down design
 - e. define recursion
 - f. what is NumPy
 - g. what is GUI

UNIT I

- 2 (a) Write Python statements corresponding to the following
 - (i) Assign to variable flowers a list containing strings 'rose', 'bougainvillea', 'yucca', 'marigold', 'daylilly', and 'lilly of the valley'.
 - (ii) Write a Boolean expression that evaluates to True if string 'potato' is in list flowers, and evaluate the expression.
 - (iii) Assign to list thorny the sublist of list flowers consisting of the first three objects in the list.
 - (iv) Assign to list poisonous the sublist of list flowers consisting of just the last object of list flowers.
- (b) Write a python program to implement string reverse function

(OR)

- 3 (a) Explain execution control structures
- (b) How to achieve parameter passing in Python.

UNIT- II

4. (a) Explain built in Exception in python with examples
 - (b) Write short notes on Dictionaries
- (OR)**
5. Explain String functions

UNIT- III

6. (a) differentiate Global and local namespaces
 - (b) explain Multiple exception handlers
- (OR)**
7. Explain class, object and instance variables.

UNIT- IV

8. Explain the concept designing GUIs
- (OR)**
9. Explain Python WWW API

MODEL PAPER

MCS 302 .NET PROGRAMMING

Time 3 Hrs

Max. Marks 70

**Answer Question No.1 Compulsory
Answer ONE Question from each unit**

**7 x 2 = 14 M
4 x 14 = 56 M**

1.
 - a) Define data binding
 - b) Explain login controls
 - c) What is master page
 - d) Describe Data Adapter
 - e) Explain docking and anchoring controls
 - f) Give the difference between check box radio button and group box controls
 - g) Define event and write different types of event
 - h) What are the characteristics of interface

UNIT-I

2.
 - a) Briefly explain about data types and keywords.
 - b) Write the procedure for an application which checks whether the entered user is valid or not.

(OR)

3.
 - a) Explain the following controls
 - i. Menus
 - ii. Timer
 - iii. PictureBox
 - iv. Tree view
 - b) Explain mouse events and key board events.

UNIT-II

4.
 - a) Explain all the validation controls.
 - b) Write the procedure to design the application which allows the valid user to enter into it.

(OR)

5.
 - a) Briefly explain about master pager and themes
 - b) With suitable example explain the navigation controls.

UNIT-III

6.
 - a) What are the concepts of object oriented programming.
 - b) Explain the following controls
 - i. ComboBox
 - ii. ListBox
 - iii. Panel
 - iv. Builtin dialogBox

(OR)

7.
 - a) Explain the steps involved in windows form design and interface
 - b) Write the procedure for coffee shop billing application (use checkbox)

UNIT-IV

8.
 - a) What is data binding? Explain the types of data binding how data binding can be implemented.
 - b) What are the ADO.NET objects.
- (or)**
9. Develop an application for student details which
 - i. Can access database
 - ii. Can bound to the controls
 - iii. Can display the details in a form

MODEL PAPER

MCS 303 OBJECT ORIENTED MODELING AND DESIGN WITH UML

Time 3 Hrs

Max. Marks 70

Answer Question No.1 Compulsory

7 x 2 = 14 M

Answer ONE Question from each unit

4 x 14 = 56 M

1.
 - a) Distinguish between object diagram and ER-diagram.
 - b) Define Meta class.
 - c) Distinguish between Aggregations versus generalization.
 - d) Explain Constraints.
 - e) What is analysis document?
 - f) Need for State-transition diagram?
 - g) Define modeling?
 - h) What is multiplicity?

UNIT-I

2.
 - a) What is Modeling? What are different Object Modeling Techniques.
 - b) Discuss how was object oriented development methodology is different from Traditional approach.

(or)
3. Explain the following terms
 - i. Association.
 - ii. Aggregation.
 - iii. Generalization.
 - iv. Composition.

UNIT-II

- 4.a) What is State modeling? How does dynamic behavior of a system Represented ?
 - b) What is an Event? Discuss about types of Events with example?
- (or)
- 5.a) What is Use Case? How was Use Case diagrams were helpful in Analysis of a System.
 - b) What is Concurrency? Discuss the concurrency with the help of an example.

UNIT-III

6. Discuss about the steps involved in Analysis of a System.
- (or)
- 7.a) Define state diagram for ATM Model.
 - b) Discuss about nested state diagram.

UNIT-IV

- 8.a) What is the task of a design? How would you differentiate a good design from bad design?
 - b) Discuss about System Testing?
- (or)
- 9.a) Discuss the programming style in the large complex systems.
 - b) Discuss about good programming style.

Computer science
Paper MCS 304.1 Artificial Intelligence

Time 3 Hrs

Max Marks 70

Answer Question No.1 Compulsory
Answer ONE Question from each unit

7 x 2 = 14 M
4 x 14 = 56 M

1. Explain the following
 - a) Define Artificial Intelligence?
 - b) What are various task domains of AI?
 - c) What is heuristic?
 - d) What is dependency directed backtracking?
 - e) What is semantic net?
 - f) What is abduction? Give an example?
 - g) Define truth maintenance system?
 - h) What is frame problem?

UNIT-I

2. a) Explain the concept of problem reduction with an example?
b) Trace the constraint satisfaction procedure solving the following crypt arithmetic problem

BEST
MADE
MASTER

(OR)

3. Write about AO* algorithm

UNIT-II

4. Trace the operation of unification algorithm on each of the following pairs of literals

- i) f(Marcus) and (Caesar)
- ii) f(x) and f(g(y))
- iii) f(Marcus, g(x,y)) & f(x,g(carsar,Marcus))

(OR)

5. a) Represent the following sentences using semantic nets
“All students answered all questions in all possible ways”
b) Built-up the CD structure for the following sentences
 - i) “While crossing sea , Hanuman saw a cannibal”
 - ii) “Americans bombed Hiroshima

UNIT-III

6. a) Give the architecture of an expert system?
b) What are expert system shells

(OR)

7. Discuss briefly about frames

UNIT-IV

8. a) What is a production system ? Explain it's characteristics?
b) Write a script to visit to a restaurant
- (OR)**
- a) What is non-monotonic reasoning
b) Explain a Justification Based Truth Maintenance System(JTMS)

Model Paper
MCS 305.1 CRYPTOGRAPHY AND NETWORKING SECURITY
Time 3 Hours **Max. Marks 70**

Answer Question No.1 Compulsory **7 x 2 = 14 M**
Answer ONE Question from each unit **4 x 14 = 56 M**

1. (a) Define Avalanche effect.
(b) Explain digital signature.
(c) Explain S/MIME.
(d) What is a firewall.
(e) Differentiate between Symmetric encryption and Public key cryptography.
(f) What are the two keys used for public key encryption?
(g) What is firewall?
(h) State Fermats Theorem

UNIT – I

2. (a) Discuss about playfair and hill cipher techniques.
(b) Briefly explain about DES encryption algorithm.
(OR)
3. (a) Define OSI security Architecture
(b) Discuss about random number generation techniques in cryptography.

UNIT – II

4. (a) Explain RSA algorithm
(b) Perform encryption and decryption using RSA algorithm for the following
 $p=3, q=11, d=7, M=5$
(OR)
5. (a) Discuss Diffie hellman key exchange algorithm
(b) Differentiate between Link level and End to end encryption

UNIT – III

7. (a) Explain in detail about authentication requirements.
(b) Define Message authentication codes and its requirements
(OR)
8. (a) Explain about Digital signature standard (DSS).
9. (b) List out the uses of hash functions.

UNIT – IV

8. (a) Write short notes on Firewalls and list various types of firewalls
(b) Explain the usage of Pretty good privacy
(OR)
9. Explain IP Security in detail