

DEHRADUN PUBLIC SCHOOL
ASSIGNMENT (2022-23)
SUBJECT - INFORMATICS PRACTICES
CLASS – XI

CHAPTER – 1 (COMPUTER SYSTEM)

Q1. Read the questions and tick the correct option.

- i. Computers understand the language of 0s and 1s which is called
 - a. Machine Language
 - b. Low level Language
 - c. Binary Language
 - d. All of the above
- ii. Program written in a high-level language is called _____ code.
 - a. Object
 - b. Source
 - c. Machine
 - d. None of the above
- iii. In a computer, CU stands for
 - a. control unit
 - b. calculating unit
 - c. cache unit
 - d. communication unit
- iv. Flash memory is a type of _____ memory.
 - a. primary
 - b. RAM
 - c. secondary
 - d. None of the above
- v. Which of the following is available without any payment?
 - a. Freeware
 - b. Free software
 - c. OSS
 - d. FLOSS

Answer the following questions.

- Q2.** Why is primary memory termed as “destructive write” memory but “non-destructive read” memory?
- Q3.** What are open source based software?
- Q4.** What is Cache memory?
- Q5.** What is the difference between an interpreter and a compiler?
- Q6.** Distinguish between CPU and ALU?
- Q7.** What is the function of output unit in a computer system?

Case-Based Question.

Q8. Memory is one of the most important element in a computer system which is the internal or external storage area and holds the data and instruction during the processing in the form of binary numbers. It also relates to many devices and components that are responsible for storing data and application on a temporary or permanent basis.

Computer memory can be classified into two types – Primary memory and secondary memory.

Based on the above information, answer the following questions.

- i. How many types of memory does the computer have?
 - a. Four
 - b. Eight
 - c. One
 - d. Two
- ii. Primary storage is _____ as compared to secondary storage.
 - a. Slow and inexpensive
 - b. Fast and inexpensive
 - c. Fast and expensive
 - d. Slow and expensive
- iii. The key features of internal memory is/are
 - a. Limited storage capacity
 - b. Temporary storage
 - c. Fast access and high cost
 - d. All the above
- iv. Internal storage is also called main
 - a. Memory
 - b. Area
 - c. Screen
 - d. Unit

- v. Which memory is used as a temporary memory?
- Non-volatile memory
 - Volatile memory
 - Hard disk memory
 - Read only memory

CHAPTER – 2 (GETTING STARTED WITH PYTHON)

Q1. Read the questions and tick the correct option.

- Which keyboard key is used to run python programs?
 - F6
 - F5
 - F + n
 - Ctrl + r
- _____ escape sequence is used for horizontal tab.
 - \n
 - \t
 - \T
 - No
- Python uses ___ to convert its instructions into machine language.
 - Interpreter
 - Compiler
 - Both of the above
 - None of the above
- By default, the Python scripts are saved with _____ extension.
 - .pyp
 - .pys
 - .py
 - .PY
- IDLE stands for _____
 - Integrated Development Learning
 - Integrated Development Learning Environment
 - Intelligent Development Learning Environment
 - None of the above

Answer the following questions.

- Q2. When was Python released? Who developed Python?
- Q3. “Python is an interpreted language”. What does it mean to you?
- Q4. What does a cross platform language mean?
- Q5. What is the difference between Interactive mode and Script Mode in Python?
- Q6. Mention one advantage and one limitation of Python?

CHAPTER – 3 (PYTHON FUNDAMENTALS)

Q1. Read the questions and tick the correct option.

- Each statement in python is terminated by _____
 - Semicolon(;)
 - Colon(:)
 - Comma(,)
 - None of the above
 - _____ is a set of valid characters that a language can recognize.
 - Identifier
 - Token
 - Character set
 - Character group
 - The smallest individual unit in a program is known as ____
 - Token
 - Punctuators
 - Literals
 - Operators

Answer the following questions.

- Q2. What is None literal in Python?
- Q3. What is the error in following code: x, y =7?
- Q4. Following code is creating problem X = 0281, find reason.
- Q5. Which of the following are syntactically correct strings? State reason.
- “Python is nice Language”
 - ‘He called me “Friend!” when he came’
 - “Very Good’
 - ‘This is a good book’
 - “Namaste
 - “I liked ‘Harry Potter’ very much”

Q6. Write a Program to obtain temperature in Celsius and convert it into Fahrenheit using formula
 $C*9/5 + 32 = F$

Case-Based Question.

Q7. Schools use “Student Management Information System” (SMIS) to manage student related data. This system provides facilities for:

Name of School	
Student Name: PQR	Roll No: 99
Class: XI	Section: A
Address : Address Line 1	
Address Line 2	
City: ABC	Pin Code: 999999
Parent's/ Guardian's Contact No: 9999999999	

- Recording and maintaining personal details of students.
- Maintaining marks scored in assessments and computing results of students.
- Keeping track of student attendance, and
- Managing many other student-related data in the school.

Let us automate the same step by step.

Identify the personal details of students from your school identity card and write a program to accept these details for all students of your school and display them in this format.

CHAPTER – 4 (DATA HANDLING)

Q1. Read the questions and tick the correct option.

- Which of the following is an assignment operator?
a. = b. /= c. *= d. All of the above
- Statement $x += y$ is equivalent to _____.
a. $x = x + y$ b. $x = x * y$ c. $y = x + y$ d. $y = y * x$
- In Python, we have _____ function for taking input from the user.
a. `input()` b. `accept()` c. `enter()` d. `insert()`
- The user may enter a number or a string but the `input()` function treats them as.
a. integer only b. list c. strings only d. tuple
- Which of the following function convert the data type of variable 'x' from float to integer?
a. `float()` b. `int()` c. `str()` d. `num()`

Answer the following questions.

Q2. Identify the data types of the following values given below.

- a. 3 b. 3j c. 13.0 d. "12" e. '14'
f. 2+0j g. 19 h. [1,2,3] i. (3,4,5)

Q3.What will be the output of the following.

- a. 12/4 b. 14//14 c. 14%4 d. 14.0/4

Q4.What will be the output of the following?

- a. 87//5 b. (87//5.0) == (87//5) c. 87//5.0 d. 17%5.0

Q5. `int('a')` produces error. Why?

Q6. Why is Boolean considered a subtype of Integers?

- Q7.** Differentiate between a syntax error and a semantic error.
Q8. What are mutable and immutable types in Python? List both of them.

CHAPTER – 5 (FLOW OF CONTROL)

Q1. Read the questions and tick the correct option.

- i. Ravi is writing a program of printing “Hello World” but he forgot to close the bracket of print() function (as shown below). What type of error is this?
print("Hello World"
a. Syntax error b. Logical error c. Runtime error d. None of the above
- ii. Aman wants to find the average of two numbers 10 and 12 and he write the code as 10 + 12/2, it would run successfully but the output is not correct. What type of error is done by Aman?
a. Syntax error b. Logical error c. Runtime error d. None of the above
- iii. _____ error causes abnormal termination of program while it is executing.
a. Syntax error b. Logical error c. Runtime error d. None of the above
- iv. Which of the following statement is correct syntactically ?
a. print(“Hello” , sep == ‘@’ , end = ‘ ’) b. print(“Hello” , sep = ‘@’ , end = ‘ ’)
c. Print(“Hello” , sep = ‘@’ , end = ‘ ’) d. print(“Hello” , sep = ‘@’ , end = ‘ ‘

Answer the following questions.

- Q2.** Write a program that searches for prime numbers from 15 through 25.
Q3. Write a for loop that displays the odd numbers from 61 to 80.
Q4. Write a program to input a digit and print it in words.

Case-Based Question.

- Q5.** Lalit is a game programmer and he is designing a game where he has to use different python functions as much as possible. Apart from other things, following functionalities are to be implemented in the game.
- i. He is simulating a dice where random number generation is required.
ii. Since the program becomes too lengthy, Lalit wants a separate section where he can store all the functions used in the game program.
Lalit is feeling difficulty in implementing the above functionalities. Help him by giving answers following questions:
- i. To implement functionality (i) which module can be used:
a. random b. randomise c. Randint d. math
- ii. In functionality (ii), Lalit should use
a. in-built functions
b. He should write another Python program
c. He should use a module with all the required functions
d. He should make a separate section in the same Python program

CHAPTER – 6 (LIST MANIPULATION)

Q1. Read the questions and tick the correct option.

- i. Which of the following is mutable data type?
a. String b. Tuple c. List d. All of the above

- ii. Which of the following commands will create a list?
- a. `list1 = list()` b. `list1 = []` c. `list1 = list([1, 2, 3])` d. All of the above
- iii. What is the output when we execute `list("hello")`?
- a. `['h', 'e', 'l', 'l', 'o']` b. `['hello']` c. `['llo']` d. `['olleh']`
- iv. Suppose `listExample` is `['h','e','l','l','o']`, what is `len(listExample)`?
- a. 5 b. 4 c. None d. Error
- v. Suppose `list1` is `[1, 5, 9]`, what is `sum(list1)`?
- a. 1 b. 9 c. 15 d. Error

Answer the following questions.

Q2. What do you understand by mutability?

Q3. If `a` is `[1,2,3]`, is `a*3` equivalent to `a+a+a`?

Q4. If `a` is `[1,2,3]`, what is the meaning of `a[1:1]=9`?

Q5. What are list slices? Does a slice operator always produce a new list?

Q6. How are lists different from strings when both are sequences?

Q7. What is the purpose of the `del` operator and `pop` method?

Q8. Assume the list: `vowels=["a", "e", "i", "o", "u"]`

What would be displayed in a Python shell for the given expression:
`vowels[2:5:2]`

Q9. The record of a student (Name, Roll No., Marks in five subjects and percentage of marks) is stored in the following list: `Std_Rec=['AmitaSrivastava', 'A-20', [90, 98, 99, 93, 89], 90.6]`

Write Python statements to retrieve the following information from the list `Std_Rec`.

- a. Roll Number of the student.
b. Percentage of the student.
c. Change the name of the student from 'AmitaSrivastava' to 'Amita Sharma'.
d. Marks in fifth subject.

CHAPTER – 7 (DICTIONARIES)

Q1. Read the questions and tick the correct option.

i. Which of the following statements create a dictionary?

- a. `d = {}` b. `d = {"john":40, "peter":45}`
c. `d = {40:"john", 45:"peter"}` d. All of the mentioned

ii. What will be the output of the following Python code snippet?

```
d1={"john":40,"peter":45}
d2={"john":466,"peter":45}
d1 == d2
```

- a. True b. False c. None d. Error

iii. What will be the output of the following Python code snippet?

```
d1={"john":40,"peter":45}
d2={"john":466,"peter":45}
d1 > d2
```

- a. True b. False c. Error d. None

iv. Suppose `d = {"john":40, "peter":45}`. To obtain the number of entries in dictionary which command do we use?

- a. `d.size()` b. `len(d)` c. `size(d)` d. `d.len()`

v. The membership operators "in" and "not in" only work with dictionary keys.

- a. True b. False

Answer the following questions.

Q2. What will print by the following statement?

```
D1 = {"cat":12, "dog":6, "elephant", 23, "beer":20}
print {"dog in D1}
```

Q3. Why can't List can be used as keys?

Q4. Can you change the order of the dictionaries contents?

Q5. Is dictionary Mutable? Why?

Q6. When are dictionaries more useful than lists?

Q7. How is clear() function different from del <dict> Statement?

CHAPTER – 10 (DATABASE CONCEPTS)

Q1. Read the questions and tick the correct option.

- i. What is a database?
 - a. Organized collection of information that cannot be accessed, updated, and managed
 - b. Collection of data or information without organizing
 - c. Organized collection of data or information that can be accessed, updated, and managed
 - d. Organized collection of data that cannot be updated
- ii. Which type of data can be stored in the database?
 - a. Image oriented data
 - b. Text, files containing data
 - c. Data in the form of audio or video
 - d. All of the above
- iii. In which of the following formats data is stored in the database management system?
 - a. Image
 - b. Text
 - c. Table
 - d. Graph
- iv. Which of the following is not a type of database?
 - a. Hierarchical
 - b. Network
 - c. Distributed
 - d. Decentralized
- v. Which of the following is not an example of DBMS?
 - a. MySQL
 - b. Microsoft Access
 - c. IBM DB2
 - d. Google
- vi. Which of the following is a function of the DBMS?
 - a. Storing data
 - b. Providing multi-users access control
 - c. Data Integrity
 - d. All of the above

Answer the following questions.

Q2. Differentiate between DDL and DML commands.

Q3. Name some commands used to assign/revoke privileges from database users.

Q4. Name some Table maintenance commands?

Q5. A table School has 7 rows and 5 columns. What is the degree and cardinality of the table School if 2 more rows are added to it?

Q6. Give the terms for each of the following:

- a. Attribute that uniquely identify the tuples in a relation.
- b. Software that is used to create, manipulate and maintain a relational database.
- c. The term given to collection of logically related records.

CHAPTER – 11 (STRUCTURED QUERY LANGUAGE)

Q1. Read the questions and tick the correct option.

- i. What does this SQL database language design to?
 - a. Maintain the data in hierarchal database management systems.

- b. Maintain the data in relational database management systems.
 - c. Maintain the data in network database management systems.
 - d. Maintain the data in object-oriented database management systems.
- ii. Determine the correct SQL command?
- a. CREATE
 - b. UPDATE
 - c. DELETE
 - d. All of the above
- iii. What is the work of CREATE command?
- a. Using this command, you can remove or erase recorded information from a database table.
 - b. It enables you to create new databases, tables, table views, and other objects using this command.
 - c. Inserting records or data into the database tables is accomplished with this command. In addition to inserting records in single rows, we can insert records in multiple rows as well.
 - d. A single or multiple rows can be accessed using this command from one or more tables of a database. Using the WHERE clause with this command is also possible.

Answer the following questions.

Q2. Differentiate between CHAR and VARCHAR Datatypes.

Q3. Write two usage of DESC in SQL.

Q4. How IS operator different from LIKE in SELECT queries?

Q5. Which keyword eliminates the redundant data from a query result?

Q6. Which function substitute NULL values in a Query result?

Q7. Write SQL commands for the following on the bases of given table TEACHER.

Table: TEACHER

TID	TName	Qualification	Sex	Salary	Subject	Date_Of_Join
101	Deepali	M.Sc	F	35000.00	Maths	1999-03-31
102	Rajat	M.Sc	M	34500.00	Physics	2000-01-01
103	Hari	M.A	M	32000.00	NULL	1997-08-20
104	Hiya	M.A	F	32000.00	English	2005-12-22
105	Sumit	M.Sc	M	47000.00	Chemistry	1998-12-11
106	Rekha	M.Sc	F	35600.00	Biology	2000-12-21
107	Anup	M.Sc	M	30000.00	NULL	2000-07-29
108	Fatimah	M.Sc	F	34000.00	NULL	2010-02-02
109	Zubin	M.A	M	49000.00	English	1998-11-20

- i. Write a query to display Teacher ID, name, salary along with Qualification.
- ii. List details of all the teachers who have not been assigned subjects yet.
- iii. How many subjects are offered to teachers?
- iv. Write a query to display the name of teachers whose name contains "I" as the last alphabet.
- v. List details of female teachers whose salary is between 40000 – 50000.

Q8. Choose appropriate answer with respect to the following code snippet.

INSERT INTO Match_Details VALUES (101, "Team Titan", "Team Rockers", 90, 86);

INSERT INTO Match_Details VALUES (102, "Team Magnet", "Team Hurricane", 78, 67);

- i. What will be the degree of Match_Details table?
 - a. 20
 - b. 15
 - c. 10
 - d. 5
- ii. What is true about the following SQL statement?

Select * FROM Match_Details;

 - a. Displays only the column names of the table.
 - b. Results in error as improper case has been used.
 - c. Displays column names and contents of the table.

d. None of the mentioned.

CHAPTER – 12 (EMERGING TRENDS)

Q1. Read the questions and tick the correct option.

i. Extremely large set of data are_____

- a. Database b. Big data c. Cloud computers d. None of these

ii. The process of encrypting and decrypting information_____

- a. Decentralized application b. Cryptocurrency
c. Block d. Cryptography

iii. The process of confirming a transaction after validating and adding it to the public Ledger is called

- a. Block b. Hashing c. Mining d. Validation

Answer the following questions:

Q2. What is augmented reality?

Q3. What is artificial intelligence(AI)?Name some applications of AI?

Q4. What is public and private cloud?

Q5. What is PaaS?

Q6. What does block chain technology do?List some advantages of block chain technology?

Q7. A company interested in cloud computing is looking for a provider who offers a set of basic services, such as virtual server provisioning and on demand storage that can combined into a platform for deploying and running customised applications. What type of cloud computing model fit requirement?

Q8. If government plans to make a smart school by applying IoT concepts, how can each of the following be implemented in order to transform a school into IoT enabled smart school?

- i. e-textbook
- ii. smart boards
- iii. Online test
- iv. wifi sensor on classroom doors
- v. Sensor in buses to monitor their location
- vi. Wearable (watches) for attendance monitoring

Q9. Five friends plan to try a startup. However, they have a limited budget and limited computer infrastructure. How can they avail the benefits of cloud service to launch their startup?

Q10. Government provide Various scholarships to students of different classes. Prepare a report on how blockchain technology can be used to promote accountability, transparency and efficiency in distribution of scholarship?