

DEHRADUN PUBLIC SCHOOL
ASSIGNMENT (2023-24)
SUBJECT - INFORMATICS PRACTICES
CLASS - XI

Chapter – 1: COMPUTER SYSTEM

Read the questions and tick the correct option.

Q1. 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

Q2. Program written in a high-level language is called _____ code.

- a. Object
- b. Source
- c. Machine
- d. None of the above

Q3. In a computer, CU stands for

- a. control unit
- b. calculating unit
- c. cache unit
- d. communication unit

Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.
- b. Both A and R are true and R is not the correct explanation for A.
- c. A is true but R is false.
- d. A is false but R is true.

Q4. Assertion (A): A Computer translate numbers into alphabets before sorting.

Reasoning (R): Binary digit is referred to as Bit.

Q5. Assertion (A): An operating system is the hardware component of the computer system.

Reasoning (R): The OS decides which process gets the processor, when and for how much time.

Subjective type questions:

Q6. Define each of the following:

- i. Byte
- ii. Kilobyte
- iii. Megabyte
- iv. Gigbyte
- v. Terabyte

Q7. State the basic units of computer. Name the subunits that make up the CPU, and give the function of each of the unit.

Q8. What are RAM and ROM? How are they alike? How are they different? What are PROM, EPROM and EEPROM?

Q9. What is the utility of these software?

- i. disk fragmentor
- ii. backup software

Q10. Case Based Question:

Keyboard is one of the most common input devices. The user can type text and command using this device. The layout of the keyboard was borrowed from the regular typewriter with some additional keys. Keyboard is used to enter data or information in a computer system which may be in numeric form or alphabetic form. When key is pressed, keyboard interacts with a keyboard controller and keyboard buffer. Keyboard controller stores the code of pressed key in keyboard buffer. There are different types of keyboards such as QWERTY, DVORAK and AZERTY.

Based on the above information, answer any **four** questions.

i. Which type of keyboard is generally used nowadays?

- a. DVORAK
- b. AZERTY
- c. QWERTY
- d. Wireless keyboard

ii. Which key on the keyboard can be used to view slideshow?

- a. F1
- b. F2
- c. F10
- d. F5

iii. How many function keys are there in keyboard?

- a. 6 b. 12 c. 18 d. 24
- iv. The most common device to input data into a computer is
 - a. Mouse b. Printer c. Joystick d. Keyboard
- v. Keyboard controller stores the code of pressed key in
 - a. keyboard buffer b. keyboard memory c. keyboard storage d. micro chip

Chapter – 2: GETTING STARTED WITH PYTHON

Read the questions and tick the correct option.

- Q1.** Python uses ___ to convert its instructions into machine language.
 a. Interpreter b. Compiler c. Both of the above d. Assembler
- Q2.** By default, the Python scripts are saved with _____ extension.
 a. .pyp b. .pys c. .py d. .PY
- Q3.** By default, the Python scripts are saved in ____
 a. Document b. Desktop c. Python installation folder d. D drive
- Q4. and Q5.** are ASSERTION AND REASONING based questions. Mark the correct choice as
 a. Both A and R are true and R is the correct explanation for A.
 b. Both A and R are true and R is not the correct explanation for A.
 c. A is true but R is false.
 d. A is false but R is true.
- Q4. Assertion (A):** Python language is platform dependent.
Reasoning (R): It is not a used friendly language. It doesn't support a wide of applications and does not provide facilities for designing games.
- Q5. Assertion (A):** Python is a general-purpose interpreted, interactive, object oriented and high level programming language.
Reasoning (R): It supports an interactive platform for testing and debugging of the code one statement at a time.

Subjective type questions:

- Q6.** Define each of the following:
 i. Interactive mode ii. Script mode
- Q7.** "Python is an interpreted language". What does it mean to you?
- Q8.** Python is a Free and Open Source language. What do you understand by this feature?
- Q9.** Write Instructions in python to get the following result: (Do it in both interactive mode and script mode)
 I am a student of KV Barabanki
 I live in Barabanki
 And I love Barabanki.
 Barabanki is 20 KM away from Lucknow This Place is famous for Dewa Sharif.

Q10. Case Based Question:

Python is one of the object-oriented programming languages. It works in Windows as well as DOS environments. It allows us to execute a code in the interactive as well as the script mode. The interactive mode is also termed as Python IDLE.

Read the above description carefully and answer the following questions:

- i. Name one object oriented programming language other than Python.
- ii. Python interactive mode is also known as Python IDLE. What does IDLE mean?
- iii. Name an operating system on which Python code can be executed.
- iv. In which mode can the Python program file be saved for future use.

Chapter – 3: PYTHON FUNDAMENTALS

Read the questions and tick the correct option.

Q1. Which of the following symbol is used to write comment?

- a. ? b. // c. # d. **

Q2. Statement below “function definition” begin with spaces called _____

- a. Indentation b. Condition c. Definition d. Spacing

Q3. _____ is a set of valid characters that a language can recognize.

- a. Identifier b. Token c. Character set d. Character group

Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.
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c. A is true but R is false.
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Q5. **Assertion (A):** Python is a general-purpose interpreted, interactive, object oriented and high level programming language.

Reasoning (R): It supports an interactive platform for testing and debugging of the code one statement at a time.

Subjective type questions:

Q6. What is None literal in Python?

Q7. Following code is creating problem X = 0281, find reason.

Q8. Write a Program to obtain temperature in Celsius and convert it into Fahrenheit using formula
 $C \times 9/5 + 32 = F$

Q9. WAP to read a number in n and prints n^2 , n^3 , n^4 .

Q10. **Case Based Question:**

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

Read the questions and tick the correct option.

Q1. Which of the following is an assignment operator?

- a. = b. /= c. *= d. ==

Q2. Statement $x += y$ is equivalent to _____

- a. $x = x + y$ b. $x = x * y$ c. $y = x + y$ d. $y = y * x$

Q3. In Python, we have _____ function for taking input from the user.

- a. input() b. accept() c. enter() d. insert()

Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.
b. Both A and R are true and R is not the correct explanation for A.
c. A is true but R is false.
d. A is false but R is true.

Q4. **Assertion (A):** Python character sets are similar to the alphabets of any languages.

Reasoning (R): The different character sets used in Python codes are letters, digits(0-9), operators, special symbols, etc.

Q5. **Assertion (A):** Keywords are the reserved words which are preserved by the Python language.

Reasoning (R): The keyboard doesn't carry any special meaning for the language translator. So, they can be used as variable names.

Subjective type questions:

Q6. Identify the data types of the following values given below –

- i. 3 ii. 3j iii. 13.0 iv. "12" v. '14'
vi. 2+0j vii. 19 viii. [1,2,3] ix. (3,4,5)

Q7. What will be the output of the following code? Why?

- i. 13 or len(13) ii. len(13) or 13

Q8. What are mutable and immutable types in Python? List both of them.

Q9. What are augmented assignment operators? How are they useful?

Q10. **Program Based Question:**

- i. WAP to calculate compound simple interest after taking the principle, rate and time.
ii. WAP to take two numbers and check that the first number is fully divisible by second number or not.

Chapter – 5: FLOW OF CONTROL

Read the questions and tick the correct option.

Q1. 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. Complex error

Q2. 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. Python error

Q3. 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 = ' ')

Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.
b. Both A and R are true and R is not the correct explanation for A.

- c. A is true but R is false.
- d. A is false but R is true.

Q4. Assertion (A): An accumulator is a variable that goes updated with a value during each iteration of a loop.

Reasoning (R): It is a must to initialise an accumulator to avoid getting garbage value during the execution of the program.

Q5. Assertion (A): A loop is a non-repetitive structure in which a statement or a set of statement are executed until the desired number of iterations is over. .

Reasoning (R): The fixed iterative loop is a looping construct used to repeat the execution of a block of statements for a fixed number of times.

Subjective type questions:

Q6. What are loops in Python? How many types of loop are there in Python?

Q7. What is the syntax of if-elif statement in Python?

Q8. WAP to compute the result when two numbers and one operator is given by user.

Q9. WAP that searches for prime numbers from 15 through 25.

Q.10 Case Based Question

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.

(1) He is simulating a dice where random number generation is required.

(2) 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 (1) which module can be used:

- a. random
- b. randomise
- c. Randint
- d. math

ii. In functionality (2), 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

Read the questions and tick the correct option.

Q1. Which of the following will create an empty list?

- a. L= []
- b. L= list(0)
- c. L=list()
- d. L= List(empty)

Q2. Suppose list Example is ['h','e','l','l','o'], what is len(listExample)?

- a. 5
- b. 4
- c. None
- d. Error

Q3. Suppose list1 is [1, 5, 9], what is sum(list1)?

- a. 1
- b. 9
- c. 15
- d. Error

Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.
- b. Both A and R are true and R is not the correct explanation for A.
- c. A is true but R is false.
- d. A is false but R is true.

Q4. Assertion (A): You can compare two lists together by using relational operators.

Reasoning (R): The relational operators such as ==,<,<=,>,>=,etc. are used to compare the list elements with each other starting with the 0th index.

Q5. Assertion (A): A list slice is an extracted part of a list.

Reasoning (R): A list slice is a list in itself.

Subjective type questions:

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

Q7. Discuss the utility and significance of Lists.

Q8. What is the purpose of the del operator and pop method? Try deleting a slice.

Q9. Start with the list[8,9,10]. Do the following using list functions

- i. Set the second entry (index 1) to 17
- ii. Add 4, 5 and 6 to the end of the list.
- iii. Remove the first entry from the list.
- iv. Sort the list.
- v. Double the list.
- vi. Insert 25 at index 3

Q.10 Case Based Question:

Given is a code snippet for list operations:

```
L1 = [1, 2, 'a', 'b', 'c', '$', '@']
```

```
p = L1.index('$')
```

```
q = L1.pop()
```

```
r = L1.insert(3, 6)
```

```
s = L1.sort()
```

With reference to the above code snippet, name the function used for each of the

- i. To place an element at a specified position in the list.
- ii. To delete the last element of the list
- iii. To arrange the elements of the list in the ascending order.
- iv. To know the position of an element in the list.

Chapter – 7: DICTIONARIES

Read the questions and tick the correct option.

Q1. 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

Q2. 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

Q3. 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()`

Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.
- b. Both A and R are true and R is not the correct explanation for A.
- c. A is true but R is false.
- d. A is false but R is true.

Q4. Assertion (A): You can also create a dictionary by using different nested lists as values.

Reasoning (R): It can be created using the `dict()` function. In this system, each inner list will contain a key and value as its elements.

Q5. Assertion (A): You can't update the value of a key in the Python dictionary.

Reasoning (R): A dictionary in the Python contains keys and their values as immutable and mutable types respectively. Since the values being mutable, they can be updated in their places as per our requirement.

Subjective type questions:

Q6. What type of objects can be used as keys in dictionary?

Q7. Can you change the order of the dictionaries contents?

Q8. How are dictionaries different from Lists?

Q9. How is clear() function different from del <dict> Statement?

Q.10 Case Based Question:

A dictionary is an unordered structure created in the memory. It contains data in terms of key-value pairs. An empty or a null dictionary does not contain any element within opening and closing curly braces { }. You can access the values corresponding to each key from a dictionary to carry any operation.

With reference to the above discussion, answer the following questions:

i. What is meant by an unordered structure?

ii. How will you identify a key and its value in a key-value pair?

iii. Name a function used to create a null dictionary.

iv. What is the term given for accessing values corresponding to each key of the dictionary?

Chapter – 8: Database Concepts

Read the questions and tick the correct option.

Q1. 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

Q2. Which of the following is not an example of DBMS?

- a. MySQL
- b. Microsoft Access
- c. IBM DB2
- d. Google

Q3. In which of the following formats data is stored in the database management system?

- a. Image
- b. Text
- c. Table
- d. Graph

Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.
- b. Both A and R are true and R is not the correct explanation for A.
- c. A is true but R is false.
- d. A is false but R is true.

Q4. Assertion (A): Structured Query language(SQL) is a database management system.

Reasoning (R): It is used to create worksheet to store data in a tabular form which is finally stored as a workbook in MS Excel.

Q5. Assertion (A): Comments are executable statements.

Reasoning (R): The comments are used to make the code more readable and also to ensure the correct execution of code while testing.

Subjective type questions:

Q6. What is SQL? What are different categories of commands available in SQL?

Q7. Name some commands used to assign/revoke privileges from database users.

Q8. Differentiate between DDL and DML commands.

Q9. Name some Table maintenance commands?

Q10. What is the purpose of using MySQL?

Chapter – 9: Structured Query Language

Read the questions and tick the correct option.

- Q1.** What does this SQL database language design to?
- Maintain the data in hierarchal database management systems.
 - Maintain the data in relational database management systems.
 - Maintain the data in network database management systems.
 - Maintain the data in object-oriented database management systems.
- Q2.** Which statement is not true about SQL?
- Using SQL in relational databases is all about inserting, updating, and deleting data.
 - Sample data can also be described with the aid of this tool.
 - It helps develop relational database functions, events, and views.
 - A SQL user can also set restrictions and permissions for a table column, a view, and a stored procedure.
- Q3.** What is the work of CREATE command?
- Using this command, you can remove or erase recorded information from a database table.
 - It enables you to create new databases, tables, table views, and other objects using this command.
 - 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.
 - 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.
- Q4. and Q5.** are ASSERTION AND REASONING based questions. Mark the correct choice as
- Both A and R are true and R is the correct explanation for A.
 - Both A and R are true and R is not the correct explanation for A.
 - A is true but R is false.
 - A is false but R is true.
- Q4. Assertion (A):** In a table, it is always possible to have more than one keys such as PAN_Number, Phone_Number, etc. which can uniquely identify each row of the table.
- Reasoning (R):** In this situation, one of them is identified as Primary Key and rest of them are refer to as the Alternate Keys.
- Q5. Assertion (A):** Using a special symbol in MySQL, there is a provision to retrieve entire records of the table with all attributes.
- Reasoning (R):** If you want to retrieve all the records of the table, use of asterisk (*) symbol after SELECT specifying the table name.
- Subjective type questions:**
- Q6.** Name some basic MySQL SQL elements.
- Q7.** Differentiate between CHAR and VARCHAR Datatypes.
- Q8.** Write two usage of DESC in SQL.
- Q9.** How is foreign key command different from primary key command?

Q10. Long Answer Based Question:

Consider the following Table named "empl" and Write SQL commands for given:

empno	ename	job	mgr	hiredate	sal	comm	deptno
8369	SMITH	CLERK	8902	1990-12-18	800.00	NULL	20
8499	ANYA	SALESMAN	8698	1991-02-20	1600.00	300.00	30
8521	SETH	SALESMAN	8698	1991-02-22	1250.00	500.00	30
8566	MAHADEVAN	MANAGER	8839	1991-04-02	2985.00	NULL	20
8654	MOMIN	SALESMAN	8698	1991-09-28	1250.00	1400.00	30
8698	BINA	MANAGER	8839	1991-05-01	2850.00	NULL	30
8882	SHIAVNSH	MANAGER	8839	1991-06-09	2450.00	NULL	10
8888	SCOTT	ANALYST	8566	1992-12-09	3000.00	NULL	20
8839	AMIR	PRESIDENT	NULL	1991-11-18	5000.00	NULL	10
8844	KULDEEP	SALESMAN	8698	1991-09-08	1500.00	0.00	30
8886	ANOOP	CLERK	8888	1993-01-12	1100.00	NULL	20
8900	JATIN	CLERK	8698	1991-12-03	950.00	NULL	30
8902	FAKIR	ANALYST	8566	1991-12-03	3000.00	NULL	20
8934	MITA	CLERK	8882	1992-01-23	1300.00	NULL	10

- i. Display all the records from table empl.
- ii. Display EmpNo and EName of all employees from the table empl.
- iii. Display employee name, salary, and department number who are not getting commission from table empl.
- iv. Display employee number, name, sal*12 as Annual salary whose commission is not NULL from table empl.
- v. List all department numbers from table empl.
- vi. List all unique department numbers from table empl.
- vii. List the details of all clerks who have not been assigned department as yet.
- viii. Display the details of employees whose name have only four letters.
- ix. Display the details of all employee whose annual salary is between 25000 to 40000.
- x. How many job types are offered to employees?
- xi. List the employees who earn more commission than their salaries.
- xii. Display name, job title and salary of employee who do not have manager.
- xiii. Display the name of employee whose name contains "A" as third letter.
- xiv. Display the name of employee whose name contains "L" as any letter.

CHAPTER - 10: EMERGING TRENDS

Read the questions and tick the correct option.

Q1. _____ technology makes user feel as if they truly are in a virtual environment.

- a. NLR b. AR c. VR d. ML

Q2. Extremely large set of data are _____

- a. Database b. Big data c. Cloud computers d. Cryptocurrency

Q3. Distributed computing system formed by a network of independent computer _____ is computing.

- a. Cloud b. Grid c. AI d. Smart

Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.

- b. Both A and R are true and R is not the correct explanation for A.
- c. A is true but R is false.
- d. A is false but R is true.

Q4. Assertion (A): The branch of AI that deals and works with natural languages, is NLP.

Reasoning (R): NLP helps computers understand, interpret and manipulate human languages and even generate human-language responses.

Q5. Assertion (A): Blockchain technology is a decentralized, digitized, public ledger of online transactions occurring among a network of peers.

Reasoning (R): Images of transaction's paper receipts, compiled together is the new blockchain.

Subjective type questions:

Q6. What is augmented reality?

Q7. What is artificial intelligence(AI)? What are some application of AI?

Q8. What is a public and private cloud?

Q9. What is on-demand service? How it is provided in cloud computing?

Q10.Long Answer Type Questions

- i. 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?
- ii. 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?
 - a. e-textbook
 - b. smart boards
 - c. Online test
 - d. wifi sensor on classroom doors
 - e. Sensor in buses to monitor their location
 - f. Wearable (watches) for attendance monitoring