

CBSE 2025

SECTION - A

1. State whether the following statement is True or False : 1
In Python, we cannot create an empty DataFrame.

2. What will be the output of the following SQL command ? 1
SELECT MONTHNAME (' 2024-08-02 ') ;
(A) 08 (B) 02
(C) February (D) August

3. Temporary data files stored by websites in our computer can be used to track our online activities and also to personalize browsing experience. These files are known as : 1
(A) Plug-ins (B) Add-ons
(C) Cookies (D) Bookmarks

4. Which of the following is not an aggregate function in SQL ? 1
(A) COUNT (*) (B) MIN ()
(C) LEFT () (D) AVG ()

5. Raheem created a unique computer software and wants to protect his creation from being copied or used without his permission. He is considering to apply for legal protection. Which type of intellectual property protection should Raheem apply for, to safeguard his software ? 1
(A) Copyright (B) Plagiarism
(C) Trademark (D) Lease

6. What is the default index type for a Pandas Series if not explicitly specified ? 1
(A) String (B) List
(C) Numeric (D) Boolean

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7. In Python which function of `matplotlib` library is used to save a plot ? 1
- (A) `save()` (B) `saveplot()`
(C) `export()` (D) `savefig()`
8. State whether the following statement is True or False :
The `MOD()` function in SQL returns the quotient of division operation between two numbers. 1
9. Which of the following data structure is used for storing one-dimensional labelled data in Python Pandas ? 1
- (A) Integer (B) Dictionary
(C) Series (D) DataFrame
10. Priya received an email that appeared to be from her bank, asking her to update her account information by clicking on a link. She clicked the link to enter her details, but immediately after, some amount was debited from her account. What type of cybercrime did Priya fall victim to ? 1
- (A) Cyber stalking (B) Phishing
(C) Fishing (D) Cyber bullying
11. Which SQL function calculates a^b ? 1
- (A) `MOD()` (B) `POWER()`
(C) `RAISE()` (D) `ROUND()`
12. Which protocol is used while communicating through video calls on the Internet ? 1
- (A) Video Over Internet Protocol
(B) Voice Over Internet Protocol
(C) Internet Protocol
(D) Video Audio Over Internet Protocol

13. Which of the following Python statements will be used to select a specific element having index as **points**, from a Pandas Series named **ser** ? 1

- (A) `ser.element(points)`
- (B) `ser.select (points)`
- (C) `ser[points]`
- (D) `ser.show[points]`

14. Excessive screen time and poor posture can lead to : 1

- (A) Faster Internet Speeds
- (B) Eye strain and other health issues
- (C) Better vision and bone density
- (D) Improved physical health

15. Which of the following libraries defines an ndarray in Python ? 1

- (A) `pandas`
- (B) `numpy`
- (C) `matplotlib`
- (D) `scipy`

16. With respect to SQL, match the function given in column-II with categories given in column-I : 1

	I		II
(i)	Math function	(a)	<code>COUNT ()</code>
(ii)	Aggregate function	(b)	<code>ROUND ()</code>
(iii)	Date function	(c)	<code>RIGHT ()</code>
(iv)	Text function	(d)	<code>YEAR ()</code>

Options :

- (A) (i)-(c), (ii)-(d), (iii)-(a), (iv)-(b)
- (B) (i)-(b), (ii)-(a), (iii)-(d), (iv)-(c)
- (C) (i)-(d), (ii)-(b), (iii)-(a), (iv)-(c)
- (D) (i)-(b), (ii)-(c), (iii)-(d), (iv)-(a)

17. Which of the following Python statements is used to change a column label in a DataFrame, **df** ? 1

- (A) `df = df.rename({old_name : new_name}, axis='columns')`
- (B) `df = df.rename(old_name, new_name), axis='columns'`
- (C) `df = df.change_name(old_name, new_name, axis='bar')`
- (D) `df = df.update({old_name : new_name}, axis='bar')`

18. In Python Pandas, DataFrame. _____ [] is used for label indexing with DataFrames. 1

- (A) **label**
- (B) **index**
- (C) **labindex**
- (D) **loc**

19. Every web page on the Internet has a unique address. This address is known as : 1

- (A) Domain Name
- (B) Protocol
- (C) Uniform Resource Locator
- (D) Network Topology

Q. 20 and Q. 21 are Assertion (A) and Reason (R) type questions. Choose the correct option as :

- (A) Both Assertion (A) and Reason (R) are True and Reason (R) is the correct explanation for Assertion (A).
- (B) Both Assertion (A) and Reason (R) are True and Reason (R) is not the correct explanation for Assertion (A).
- (C) Assertion (A) is True and Reason (R) is False.
- (D) Assertion (A) is False, but Reason (R) is True.

20. **Assertion (A) :** The **drop()** method in Pandas can be used to delete rows and columns from a DataFrame. 1

Reason (R) : The **axis** parameter in the **drop()** method specifies whether to delete rows (**axis=0**) or columns (**axis=1**).

21. **Assertion (A) :** The **ROUND()** function in SQL can be used to round off a number to a specified number of decimal places. 1

Reason (R) : The **ROUND()** function is a string function that accepts character values as input and returns numerical values as output.

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SECTION - A

1. In _____ topology, the devices are arranged in the form of multiple branches in hierarchical manner. 1
(i) Star (ii) Tree
(iii) Mesh (iv) Bus

2. Ridhima purchased a license for a copy of a software and made additional copies without the permission of the copyright owner. This act of hers is known as _____. 1
(i) Trademark Infringement (ii) Identity Theft
(iii) Copyright Infringement (iv) Patent

3. What can an individual do to enhance the privacy of data stored digitally ? 1
(i) Share sensitive information on social media platforms.
(ii) Use your date of birth as your password.
(iii) Regularly update software installed on your device.
(iv) Download and install software from unknown sources.

4. What will be the output of the following query ? 1
SELECT POWER (2,MOD (17,3)) ;
(i) 8 (ii) 1
(iii) 0 (iv) 4

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5. Which of the following is not an aggregate function in MYSQL ? 1
(i) **AVG ()** (ii) **MAX ()**
(iii) **LCASE ()** (iv) **MIN ()**
6. _____ is the gaining of unauthorized access to data in a computer system. 1
(i) Phishing (ii) Plagiarism
(iii) Hacking (iv) Copyright violation
7. Which of the following is NOT true with respect to CSV files ? 1
(i) Values are separated by commas.
(ii) **to_csv ()** can be used to save a dataframe to a CSV file.
(iii) CSV file is created using a word processor.
(iv) CSV file is a type of text file.
8. Which MySQL command helps to add a primary key constraint to any table that has already been created ? 1
(i) **UPDATE** (ii) **INSERT INTO**
(iii) **ALTER TABLE** (iv) **ORDER BY**
9. What will be the output of the following query ? 1
SELECT SUBSTR("G20 2023 INDIA",5,4) ;
(i) G20 2 (ii) 2023
(iii) INDI (iv) 023
10. What will be the output of the following Python code ? 1
import pandas as pd
dd={'One':1,'Two':2,'Three':3,'Seven':7}
rr=pd.Series(dd)
rr['Four']=4
print(rr)
(i) One 1
Two 2
Three 3
Seven 7
dtype: int64

(ii) One 1
Two 2
Three 3
Four 4
Seven 7
dtype: int64

(iii) Four 4
One 1
Two 2
Three 3
Seven 7
dtype: int64

(iv) One 1
Two 2
Three 3
Seven 7
Four 4
dtype: int64

11. Which of the following clause cannot work with SELECT statement in MYSQL ? 1

- | | |
|--------------------|-------------------------|
| (i) FROM | (ii) INSERT INTO |
| (iii) WHERE | (iv) GROUP BY |

12. Which of the following command will not show first five rows from the Pandas series named S1 ? 1

- | | |
|-------------------------|--------------------------|
| (i) S1[0:5] | (ii) S1.head() |
| (iii) S1.head(5) | (iv) S1.head[0:5] |

13. Rama was unable to understand how the recruiters were able to know about her digital activity when she has not shared anything with them. The recruiters might have checked _____ of Rama. 1
- (i) Carbon Footprint (ii) Water Footprint
(iii) Online print (iv) Digital Footprint
14. Which MySQL string function is used to extract a substring from a given string based on a specified starting position and length ? 1
- (i) **SUBSTRING_INDEX()** (ii) **LENGTH()**
(iii) **MID()** (iv) **TRIM()**
15. The software that is free for anyone, and its source code is available for access, modification, correction, and improvement is called _____. 1
- (i) Proprietary software (ii) Commercial software
(iii) Free and Open source software (iv) Copyrighted software
16. _____ help in data protection through copyrights, patents and trademarks. 1
- (i) Data Privacy Right (ii) Right to Innovation
(iii) Intellectual Property Rights (IPR)
(iv) Right to Data Protection
17. **Assertion (A)** : Cyber Bullying can have serious, emotional and psychological effects on victims. 1
- Reason (R)** : Online Bullying is not a crime while offline bullying is a crime.
- (i) Both (A) and (R) are true and (R) is the correct explanation for (A).
(ii) Both (A) and (R) are true and (R) is not the correct explanation for (A).
(iii) (A) is true and (R) is false.
(iv) (A) is false but (R) is true.

18. **Assertion (A)** : A Series is a one dimensional array and a DataFrame is a two-dimensional array containing sequence of values of any data type. (int, float, list, string, etc.)

1

Reason (R) : Both Series and DataFrames have by default numeric indexes starting from zero.

- (i) Both (A) and (R) are true and (R) is the correct explanation for (A).
- (ii) Both (A) and (R) are true and (R) is not the correct explanation for (A).
- (iii) (A) is true and (R) is false.
- (iv) (A) is false but (R) is true.

CBSE 2023

Part – A

1. Which of the following topologies is very efficient and all nodes are connected to a central hub ? 1
(i) Star (ii) Tree
(iii) Bus (iv) Ring
2. Ramandeep is a young woman with great aspirations and has a good team of like-minded people. She along with her team members started a company to sell handicrafts online and also designed a logo for their company. What type of intellectual property does this logo represent ? 1
(i) Patents (ii) Copyright
(iii) Design (iv) Trademark
- 3.. Which of the following is a type of cybercrime where objectionable and demeaning comments are posted on social media platform about a person, such that he/she is mentally harassed ? 1
(i) Phishing (ii) Hacking
(iii) Cyber bullying (iv) Identity Theft
4. Which of the following is the correct output of the following SQL command ? 1
SELECT ROUND (7876.4568, 2) ;
(i) 7876.46 (ii) 7876.45
(iii) 7900 (iv) 7900.4568
5. Aggregate functions are also known as : 1
(i) Scalar Functions (ii) Single Row Functions
(iii) Multiple Row Functions (iv) Hybrid Functions

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6. Primary law in India for matters related to e-commerce and cyber crime is : 1
(i) IT Act 1995 (ii) IT Act 2000
(iii) IT Act 1998 (iv) IT Act 2010
7. Ravisha has stored the records of all students of her class in a MYSQL table. Suggest a suitable SQL clause that she should use to display the names of students in alphabetical order. 1
(i) **`SORT BY`** (ii) **`ALIGN BY`**
(iii) **`GROUP BY`** (iv) **`ORDER BY`**
8. To remove the leading and trailing space from data values in a column of MySql Table, we use 1
(i) **`Left( )`** (ii) **`Right( )`**
(iii) **`Trim( )`** (iv) **`Ltrim( )`**
9. If the substring is not present in a string, the **`INSTR( )`** returns : 1
(i) - 1 (ii) 1
(iii) NULL (iv) 0
10. What will be the output of the following code ? 1

```
import pandas as pd
myser = pd.Series([0, 0,0])
print(myser)
```


(i) 0 0 (ii) 0 1
0 0 0 1
0 0 0 2
(iii) 0 0 (iv) 0 0
1 0 1 1
2 0 2 2
11. Which of the following is a two-dimensional labelled data structure of Python ? 1
(i) Relation (ii) Dataframe
(iii) Series (iv) Square
12. To compare data values of commission earned by salesmen over a year, which of the following type of graph should preferably be used ? 1
(i) line (ii) area
(iii) bar (iv) scatter

13. Which of the following is **not** a web browser ? 1
 (i) Opera (ii) Google Chrome
 (iii) Linux (iv) Mozilla Firefox
14. Which of the following is not a valid aggregate function in MYSQL ? 1
 (i) **COUNT ()** (ii) **SUM ()**
 (iii) **MAX ()** (iv) **LEN ()**
15. The digital footprint that we leave online unintentionally is called 1
 (i) Active digital footprint (ii) Passive digital footprint
 (iii) True digital footprint (iv) False digital footprint
16. E-waste is responsible for the degradation of our environment if not properly treated or disposed of. Some of the feasible methods of e-waste management are reduce, _____ and recycle. 1
 (i) reuse (ii) recheck
 (iii) resubmit (iv) regular
- Q. 17 and 18 are ASSERTION (A) and REASONING (R) based questions. Mark the correct choice as
- (i) Both (A) and (R) are true and (R) is the correct explanation for (A).
 (ii) Both (A) and (R) are true and (R) is not the correct explanation for (A).
 (iii) (A) is true and (R) is false.
 (iv) (A) is false but (R) is true.
17. **Assertion (A) :** A static webpage does not change for each person visiting the web page. 1
Reason (R) : When a web server receives a request for a dynamic web page, it locates and updates the page and sends it to the browser of the client.
18. **Assertion (A) :** The output of addition of two series will be NaN, if one of the elements or both the elements have no value(s). 1
Reason (R) : While performing mathematical operations on a series, by default all missing values are filled in with 0.