



Delhi Public School, Howrah

PERIODIC TEST II (2025-2026)

CLASS – XII

Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

SUBJECT: COMPUTER SCIENCE (CODE - 083)

THEORY EXAMINATION

Time Allowed:- 3 Hours

F.M.-70

General Instructions:

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A, consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B, consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C, consists of 3 questions (29 to 31). Each question carries 3 Marks.
- Section D, consists of 4 questions (32 to 35). Each question carries 4 Marks.
- Section E, consists of 2 questions (36 to 37). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.
- In case of MCQ, text of the correct answer should also be written.

SECTION - A

Q1. Aarav is making a mobile app where some values must never change after being created. Which of the following Python data types should he use? (1)

- (A) List (B) Dictionary (C) Tuple (D) Set

Q2. Ritu is building a chatbot in Python and needs to count the number of characters entered by the user. Which function should she use? (1)

- (A) count() (B) len() (C) length() (D) size()

Q3. A banking application needs to ensure that some code executes even if an error occurs (for example, closing a file after processing). Which Python keyword will help? (1)

- (A) break (B) except (C) finally (D) end

Q4. In a library management system, the program must check if a book ID exists in a list of IDs. Which operator should be used? (1)

- (A) in (B) not in (C) exists (D) member of

Q5. Identify the invalid variable name from the following used by a student in his project. (1)

- (A) _id (B) 1student (C) student_1 (D) StudentName

Q6. While writing logs to a file, the developer forgot to mention the mode. By default, which mode will open() use? (1)

- (A) r (B) w (C) a (D) rb

Q7. In an online exam system, the input data has extra spaces at the beginning and end. Which function should be used to remove them? (1)

- (A) trim() (B) strip (C) remove() (D) lstrip()

- Q8. In computer networks, which device is used to connect multiple devices within the same LAN. (1)
 (A) Router (B) Switch (C) Gateway (D) Repeater
- Q9. A gaming app generates a random number between 1 and 10 each time a dice is rolled. Which command is correct? (1)
 (A) random.randint(1,10) (B) random.range(1,10) (C) random.rand(1,9) (D) random.random(1,10)
- Q10. Sneha's program ran without syntax errors, but the output was wrong. What type of error is this? (1)
 (A) Runtime Error (B) Logical Error (C) Syntax Error (D) Machine Error
- Q11. Pickling is used in a hospital management system to: (1)
 (A) Save objects permanently into a file (B) Handle exceptions
 (C) Manage RAM efficiently (D) Encrypt passwords
- Q12. In networking, which protocol is mainly used to send emails from a client to a mail server? (1)
 (A) FTP (B) SMTP (C) POP3 (D) HTTP
- Q13. In a food-ordering system, dishes are served on 'last ordered, first served' basis. Which data structure suits this? (1)
 (A) Queue (B) Stack (C) List (D) Dictionary
- Q14. A student wants to convert 'exam' to 'EXAM'. Which function should he use? (1)
 (A) upper() (B) capitalize() (C) isupper() (D) toUpper()
- Q15. A shopkeeper updates prices frequently. Which data type should he use to store prices? (1)
 (A) tuple (B) list (C) string (D) int
- Q16. To calculate square root of numbers in his science project, Karan imported a module. Which module did he use? (1)
 (A) math (B) random (C) string (D) statistics
- Q17. Which function ensures that a file closes after use? (1)
 (A) file.close (B) close(file) (C) file.shut() (D) end()
- Q18. In a web browser, a link like www.cbse.gov.in is technically called: (1)
 (A) Universal Resource Locator (B) Uniform Resource Locator
 (D) Unified Reference Link (D) Uniform Resource Link
- Q19. Which of the following is an invalid file mode? (1)
 (A) r+ (B) rb+ (C) rr (D) w+
- Q20 and Q21 are ASSERTION AND REASONING based questions. Mark the correct choice as**
(a) Both A and R are true but R is not the correct explanation for A
(b) A is True but R is False
(c) Both A and R are true and R is the correct explanation for A
(d) A is false but R is True
- Q20. Assertion (A): In a flight booking system, once a booking ID is assigned using a tuple, it cannot be modified.
 Reason
 (R) : Tuples are immutable in Python. (1)
- Q21. Assertion (A): In an ATM transaction, the finally block is always executed to close the transaction log.
 Reason
 (R): finally block executes only when an exception occurs. (1)

SECTION - B

Q22. (a) A company stores employee records in files. Explain two differences between storing data in text files and binary files. (2)

OR

(b) Differentiate between text files and CSV files in Python with one example use case each.

Q23. (a) A college system maintains marks as a list. Predict the output of the following: (2)

```
marks = [95, 87, 76, 89]
```

```
print(marks[-3:-1])
```

OR

(b). For the tuple:

```
t = (50, 60, 70, 80)
```

```
print(t[1:3])
```

Q24. (a) A school wants to save exam results in 'results.txt'. Write Python code to open the file in append mode and write 'Result Updated'. (2)

OR

(b) Write Python code to open 'data.txt' in read mode and display first 25 characters.

Q25. A student entered 'Exam2025' as input. What will the output be for: (2)

```
s = 'Exam2025'
```

```
print(s.isalpha(), s.isdigit())
```

Q26. During program execution, sometimes the code has empty loops. Which statement (pass/continue) should be used and why? (2)

Q27. (a) Expand the following networking terms used in online education portals: (2)

(i) TCP/IP

(ii) URL

OR

(b) Expand the following terms:

(i) HTTP

(ii) DNS

Q28. (a) In a shopping cart system, data must be stored as { 'item': 'price' }. Give two uses of dictionary in such situations. (2)

OR

(b) For a school result system, data is stored in lists. Mention two uses of lists here.

SECTION - C

Q29. (a) A file 'poem.txt' contains several lines. Write a Python function that counts and displays the number of lines starting with 'T'. (3)

OR

(b) Write a function that reads 'story.txt' and counts the number of words in it.

Q30. (a) An airport system uses stack to manage undo operations and queue to manage passenger boarding. Explain with examples. (3)

OR

(b) Write a Python program to demonstrate push and pop operations on a stack using list.

Q31. A binary file 'student.dat' contains [RollNo, Name]. Write a function in Python to search and display details for

a given RollNo.

(3)

SECTION - D

Q32.(a) Write a Python function to implement stack operations (push, pop) using list for a ticket-booking system. Show function calls. (4)

OR

(b) Write a Python function to implement queue operations (insert, delete) for customer service requests using list.

Q33. (a) A school uses a computer network to share resources. (4)

(i) Explain two differences between LAN and WAN with examples.

(ii) Write one advantage of using a switch instead of a hub in a school network.

OR

(b) In an e-commerce company's network:

(i) Define the role of DNS.

(ii) Differentiate between HTTP and HTTPS.

Q34. (a) A text file 'news.txt' contains several paragraphs. Write a Python program to read the file and display the frequency of each word. (4)

OR

(b) Write a program to display the longest word in 'news.txt'.

Q35. Write a Python program to handle divide-by-zero error in ticket price calculation using try, except, and finally. (4)

Section – E

Q36. (b) A binary file 'employee.dat' contains records [EmpID, Name, Salary]. Write a Python program to: (5)

(i) Add new employee records.

(ii) Display employees earning more than 60,000.

OR

(b) A binary file 'product.dat' contains [ProdID, Name, Price]. Write Python program to:

(i) Add new product records.

(ii) Display products priced above 1000.

Q37. (a) A helpdesk uses a queue to handle complaints. Write a menu-driven Python program to: (5)

1. Insert complaint

2. Remove complaint

3. Display queue

OR

(b) A text editor uses a stack to perform undo operations. Write a menu-driven Python program to:

1. Push action

2. Pop action

3. Display stack