



GOVERNEMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSEMENT BOARD
6th CROSS, MALLESHWARAM, BENGALURU-560 003
2025-26 II PUC MODEL QUESTION PAPER- 3

SUBJECT: COMPUTER SCIENCE (41)

MAXIMUM MARKS – 70

TIME: 03 HRS

No. OF QUESTIONS – 44

PART A

Answer ALL the questions. Each question carries ONE mark.

I. Select the correct answer from the choices given.

20 x 1= 20

1. The exception raised when a local or global variable is not defined is

- a. ImportError
- b. TypeError
- c. ValueError
- d. NameError

2. The default file opening mode in Python is

- a. <r> the read only mode
- b. <w> the write mode
- c. <a> the append mode
- d. <r+> the read write mode

3. Assertion(A): A stack is a linear data structure that stores the elements in FIFO order

Reason(R): In stack a new element is added and removed from one end only

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

4. The operations used to view elements at the front of the Queue, without removing it from the Queue is

- a. Dequeue ()
- b. Peek ()
- c. Enqueue ()
- d. Tell ()

5. The time complexity of a quadratic time algorithm is

- a. n^2
- b. n^3
- c. $\log(n)$
- d. 1

6. Number of passes required to sort a list of size 100 using bubble sort is

- a. 100
- b. 1000
- c. 10
- d. 99

7. The purpose of data constraint in database is

- a. to ensure reliability
- b. to define size of databases
- c. to specify storage format
- d. to speedup query

8. The degree of the cartesian product of two relations A and B is the

- a. Product of their cardinalities
- b. Difference of their cardinalities
- c. Quotient of their cardinalities
- d. Sum of their cardinalities

9. Identify the correct date function from the following

- a. FINDDATE ()
- b. JULIANDATE ()
- c. NOW ()
- d. SYSTEM_DATE ()

10. The SQL command to modify the structure of a table is

- a. CREATE
- b. UPDATE
- c. INSERT
- d. ALTER

11. The device used for conversion between digital and analogue signal is

- a. Modem
- b. Repeater
- c. Router
- d. Switch

12. The approximate range of personal area networks is

- a. 14 meters
- b. 5 meters
- c. 10 meters
- d. 20 meters

13. Choose full duplex communications device from the following

- a. Mobile phones
- b. Walkie-talkie
- c. Television
- d. Microphone

14. Identify the request respond protocol from the following

- a. IP
- b. TCP
- c. UDP
- d. HTTP

15. Choose the item not belonging to the group

- a. Firewall
- b. Virus
- c. Worms
- d. Ransomware

II. Fill in the blanks choosing appropriate words from those given in the brackets (Pickle, Exceptions, Product, Distinct, Union, Redundancy, Order By)

- 16. _____disrupts the normal execution of a program
- 17. _____ Python module is used to perform read-write operations on binary file
- 18. _____refers to duplication of data in a database
- 19. _____clause is used along with select to avoid duplicate values in an SQL query
- 20. _____operation is used to combine the selected rows of two tables at a time

PART B

III. Answer any FOUR questions. Each question carries TWO marks 4 x 2 = 8

21. With appropriate syntax explain PUSH operation on stack using Python
22. List out two operations on double ended queue
23. Mention any two applications of modified binary search
24. Explain the role of UNIQUE constraint in a database
25. Describe INSTR() function in MySql
26. What is URL? Explain.
27. Explain Point-To-Point protocol

PART C

IV. Answer any FOUR questions. Each question carries THREE marks

4 x 3 = 12

28. Define the following
 - a. Exception handler
 - b. Throwing an exception
 - c. Catching an exception
29. Answer the following
 - a. Open a file "exam.txt" in "r" mode using with clause
 - b. Print the contents using appropriate function
30. What is the basic principle behind bubble sort?
31. What is hashing? Explain how it improves the efficiency of searching
32. Describe database schema
33. Explain natural join
34. Explain bus topology

PART D

V. Answer any FOUR questions. Each question carries FIVE marks

4 x 5 = 20

35. Using stack evaluate the postfix expression $A B * C / D *$ with
A=3, B=5, C=1, D=4
36. Write a Python program test whether a given string STR stored in a double ended queue DQ is a palindrome or not
37. Write an algorithm to perform linear search on a list L of N elements
38. Define DBMS and explain the following in respect of DBMS
 - a. Database Engine
 - b. Candidate Key
 - c. Query
 - d. Cardinality
39. Explain Local Area Network
40. What is transmission media? Explain types of transmission media
41. Explain Keyloggers in detail

PART E

Answer any TWO questions. Each question carries FIVE marks

2 x 5 = 10

42. Perform Selection sort algorithm on the following list of elements correctly and neatly showing the various passes while sorting in ascending order

99	88	77	65	55
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43. The following are the runs scored by two batsman's A and B of team Alpha on the first five innings of three consecutive test matches

Batsman A: 77,89,45,63,70 runs per innings

Batsman B: 100,45,122,88,99 runs per innings

- Find standard deviation of scores of both Batsman A and B
 - Based on standard deviation who is more consistent in scoring
44. Write SQL commands for questions (a) to (e) based on data given in the EMPLOYEE table given below

ID	NAME	DOB	DEPARTMENT	SALARY	SEX
1111	AAAA	01-08-1998	ACCOUNTS	156780	M
2222	BBBB	12-12-200	HR	199950	F
1010	CCCC	23-06-2000	SALES	140000	F
5456	ZZZZ	01-01-2002	PRODUCTION	250000	M
7272	DDDD	11-01-2001	ACCOUNTS	180000	M
3486	LLLL	08-08-1998	HR	200000	M

- Display information of all the employees in ascending order of their date of birth
- To Compute the average salary of all the employees
- To Display count of employees working in various departments
- Command to Calculate the total salary of all the employees
- Generate report of employees whose salary is in the range 150000 and 200000
