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FOR KARNATAKA CLASS 12 PREPARATION

# Karnataka 2nd PUC Model Question Paper 2027 for Computer Science (Paper 3)

| EXAM | YEAR | TYPE | SUBJECT |
| --- | --- | --- | --- |
| Karnataka Class 12 | 2027 | Sample Paper | Computer Science |

**GOVERNMENT OF KARNATAKA**
**KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD**
**6TH CROSS, MALLESHWARAM, BENGALURU – 560 003**
**2026 -27 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 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 degrees

**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

**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

**IV. 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 |

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
    a. Find standard deviation of scores of both Batsman A and B
    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 |

a. Display information of all the employees in ascending order of their date of birth

b. To Compute the average salary of all the employees

c. To Display count of employees working in various departments

d. Command to Calculate the total salary of all the employees

e. Generate report of employees whose salary is in the range 150000 and 200000

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