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FOR KARNATAKA CLASS 12 PREPARATION

Karnataka 2nd PUC Model Question Paper 2027 for Computer Science (Paper 5)

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

GOVERNEMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSEMENT BOARD
6th CROSS, MALLESHWARAM, BENGALURU-560 003
2026-27 II PUC MODEL QUESTION PAPER - 5

SUBJECT: COMPUTER SCIENCE **MAXIMUM MARKS: 70**

TIME: 03 HRS **NUMBER 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 built-in exception raised when a file specified in a program statement cannot be opened is**
   a. ValueError b. IOError c. NameError d. TypeError
2. **Which one of the following Python modules provides the dump ( ) method to serialize objects into a file?**
   a. pickle b. json c. sys d. os
3. **Assertion(A):Stack data structure is used to reverse a string**
   Reason(R): The principle of stack is LIFO
   a. A is true, R is correct reason
   b. A is true, R is not correct reason
   c. A is false, R is correct reason
   d. A is false, R is not correct reason
4. **Identify the statements which are not correct about Deque**
   a. It is a data structure where elements can be added or removed at either end.
   b. Adding or removal of elements can happen in the middle
   c. Deque can support both stack and queue operations.
   d. Insertfront operation is used to insert new element at the front of the deque
5. **What kind of algorithms have a time complexity of O(n)?**
   a. Quadratic time algorithms b. Constant time algorithms
   c. Logarithmic time algorithms d. Linear time algorithms
6. **Which of the following examples represent the worst case input for an insertion sort?**
   a. array in sorted order
   b. normal unsorted array
   c. array sorted in reverse order
   d. large array
7. **A column in a relation is also called**
   a. Attribute b. Tuple c. Domain d. Degree
8. **What is the maximum length allowed for a VARCHAR data type in MySQL?**
   a. 32,767 b. 65,535 c. 1,024 d. 255

9. What will the result of DANCE ∩ MUSIC contain?

a. All participants of either events

b. Only MUSIC participants

c. Only DANCE participants

d. Both DANCE and MUSIC participants.

10. Which of the following functions returns the number of non-NULL entries in a column?

a. COUNT(*) b. COUNT(column)

c. SUM(column) d. MAX(column)

11. The protocol introduced as standard protocol on ARPANET is

a. PPP b. HTTP c. FTP d. TCP/IP

12. Which of the following is a typical data rate range for LAN

a. 0.5 Mbps to 2 Mbps

b. 10 Mbps to 1000 Mbps

c. 10 Gbps to 100 Gbps

d. 1000 bps to 10 kbps

13. A short range wireless technology that can be used to connect mobile-phones, mouse, headphones, keyboards is called

a. NFC b. Infrared c. Bluetooth d. Wi-Fi

14. **Which issue is beyond FTP's scope in device communication?**

a. Use of different conventions while naming files

b. It ensures an IP address for each communicating device

c. Representation of text and data in different formats

d. Having different directory structure

15. Snooping means

a. Secretly transferring data file

b. Secretly sending emails

c. Secretly listening to a conversation

d. Secretly watching online activities

II. Fill in the blanks choosing the appropriate word/words from those given in the brackets.

(**Throwing, AVG( ), DROP**, **RDBMS**, **Catching**, **seek( )**, **tell( )**)

16. _____ is the process of executing suitable exception handler

17. _____Python method is used to return the current position of a file pointer

18. _____is used to store data in related tables

19. _____command removes a table from the database

20. _____is an aggregate function in SQL

PART-B

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

21. Write a Python function to test whether a stack is empty.

22. Differentiate between queue and deque.

23. Give one advantage and one disadvantage of Linear Search method.
24. Mention the two rules for governing tuple of a relation
25. Write output of the following SQL command
    a. Select POW(2,5)
    b. Select ROUND(342.9234,-1);
26. What is an RJ-45 connector? Mention its role
27. Identify any two disadvantages of optic fibre?

PART – C

IV. **Answer any FOUR questions. Each question carries THREE marks. 4 x 3 = 12**

28. State the function of the finally clause in Python and specify its position in a try block.
29. Write a note on binary files
30. Explain how the first pass of Selection Sort places the smallest element in the first position
31. Construct the algorithm fragment for Binary Search using while loop.
32. Define the following with respect to database
    a. meta data
    b. data instance
    c. query
33. Write any three SQL constraints
34. Describe the primary functions of a network switch and give two features that distinguish it from a hub.

PART – D

V. **Answer any FOUR questions. Each question carries FIVE marks. 4 x 5= 20**

35. Give short notes on the following:
    a. What is ordering principle of stack?
    b. Which data structure is used for implementation of stack in python?
    c. What are the fundamental operations performed on stack?
    d. Who introduced different way of representing arithmetic expression?
36. Define queue? Implement any two queue operations in Python
37. Considering a list of numbers 34, 16, 2, 99, 80 in order find the position of elements using hashing technique assuming hash table of size as 12.
38. Explain the role of foreign key in database management systems
39. Define the DNS server and identify four facts about DNS server.

40. Write proper definitions for the following:
    a. Message
    b. Communication media
    c. Protocol
    d. Bandwidth
    e. HTTP
41. Describe network Intrusion problems.

PART – E

VI. Answer any TWO questions. Each question carries FIVE marks. 2 x 5 = 10

42. Write the process to sort the following list of elements in ascending order using bubble sort algorithm clearly depicting each pass with appropriate index at the beginning of each pass.
    102, 89, 73, 21, -9
43. Calculate standard deviation for the following set of observations depicting data in a tabular form given the mean is 77
    Given series 60, 70, 80, 85, 90
44. You are given a table CUSTOMER with the attributes
    Custnum, Custname, Email, QuantityPurchased, Purchasedate
    a. Suggest appropriate SQL data types for the given attributes
    b. Identify the key attributes present in the structure
    c. Assuming values already exists answer the following making use of above-mentioned column names
        i. Write appropriate SQL command to display a report of quantity purchased on a given date.
        ii. Write command to display quantity purchased by every customer.
        iii. Write appropriate command to display all the records

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