

PRE-BOARD EXAMINATION TERM II (2021-22)  
CLASS XII  
COMPUTER SCIENCE

TIME: 2 HOURS

MAX.MARKS: 35

General Instructions:

- The question paper is divided into 3 sections – A, B and C
- Section A, consists of 7 questions (1-7). Each question carries 2 marks.
- Section B, consists of 3 questions (8-10). Each question carries 3 marks.
- Section C, consists of 3 questions (11-13). Each question carries 4 marks.
- Internal choices have been given for question numbers 7, 8 and 12.

**Section -A**

**Each question carries 2 marks**

- |   |  |   |
|---|--|---|
| 1 | Give any two applications of stacks.   | 2 |
| 2 | (i) What is the role of TCP/IP   | 1 |
|   | (ii) Differentiate between guided and unguided media   | 1 |
| 3 | Write one similarity and one difference between UNIQUE and PRIMARY KEY constraints.            | 2 |
| 4 | Explain the role of execute( ) and rowcount( ) with example.                                   | 2 |
| 5 | Consider the following tables FACULTY and COURSES and give outputs for SQL queries (i) to (iv) | 2 |

FACULTY

F_ID	Fname	Lname	Hire_date	Salary
102	Amit	Mishra	12-10-1998	12000
103	Nitin	Vyas	24-12-1994	8000
104	Rakshit	Soni	18-5-2001	14000
105	Rashmi	Malhotra	11-9-2004	11000
106	Sulekha	Srivastava	5-6-2006	10000

COURSES

C_ID	F_ID	Cname	Fees
C21	102	Grid Computing	40000
C22	106	System Design	16000
C23	104	Computer Security	8000
C24	106	Human Biology	15000
C25	102	Computer Network	20000
C26	105	Visual Basic	6000

- |   |  |   |
|---|--|---|
|   | i. Select COUNT(DISTINCT F_ID) from COURSES;   |   |
|   | ii. Select MIN(Salary) from FACULTY, COURSES where COURSES.F_ID =FACULTY.F_ID;   |   |
|   | iii. Select avg(Salary) from FACULTY where Fname like 'R%'   |   |
|   | iv. SELECT SUM(Salary) FROM FACULTY;   |   |
| 6 | (i) Karan wants to remove all the data from table WORKER from the database department. Write the command for the same. | 1 |

(ii) Consider the following tables PERSON and ORDERS

Table : PERSON

P_Id	Last_Name	First_Name	City
1	Sharma	Abhay	Mumbai
2	Gupta	Mohan	Delhi
3	Verma	Akhil	Mumbai

Table : ORDERS

O_Id	Order_No	P_Id
1	10050	3
2	25000	3
3	5687	1
4	45000	1
5	35000	15

Write a command to perform inner join on two tables PERSON and ORDERS.

7 In a database there are two tables 'CD' and 'TYPE' as shown below :

Table : CD

CODE	TITLE	DURATION	SINGER	CATEGORY
101	Sufi Songs	50 min	Zakir Faiz	12
102	Eureka	45 min	Shyama Mukherjee	12
103	Nagmey	23 min	Sonvi Kumar	77
104	Dosti	35 min	Bobby	1

Table : TYPE

CATEGORY	DESCRIPTION
1	Jazz
12	Classical
40	Country Side
78	Pop

- Name the Primary key in "CD" table.
- Name the foreign key in "CD" table.
- Write the Cardinality and Degree of "TYPE" table.

Or

- Identify the candidate key(s) from the table CD.
- Write the Cardinality and Degree after the cartesian product of CD and TYPE.

### SECTION – B

Each question carries 3 marks

8 Write a user defined function in Python to perform the following operations based on the list. 3

- PUSH(Arr), where Arr is a list of numbers. From this list push all numbers divisible by 5 into a stack implemented by using a list.
- Display the stack if it has at least one element, otherwise display appropriate error message.

Or

Manya has created a dictionary containing names and salary as key value pairs of 10 employees. Write a program, with separate user defined functions to perform the following operations:

- Push the keys (name of the employee) of the dictionary into a stack, where the corresponding value (salary) is greater than 15000.
- Pop function to remove the element from stack and display the content of the stack

9 (i) In Marks column of 'Student' table, for Rollnumber 2, the Class Teacher entered the marks as 45. However there was a totaling error and the student has got her marks increased by 5. Which MySQL command should she use to change the marks in 'Student' table. 1

(ii) Differentiate between DDL and DML. 2

- 10 A MULTI CHAIN MyGym is considering to maintain their inventory using SQL to store the data. As a database administrator, Amya has decided that : 3
- Name of the database -mygym
  - Name of the table -GYM
  - The attributes of GYM are as follows:
- ICODE—character of size 10  
 INAME—character of size 20  
 PRICE -numeric  
 BRANDNAME —character of size 20
- Write MySQL commands for:
- a. Create the database named as mygym.
  - b. Create the table GYM as per given specifications.

**Section C**

**Each question carries 4 marks**

- 11 Consider the following tables Supplier and Consumer. Write SQL commands for the statements (a) to (d). 4

**Supplier**

SupplierID	SupplierName	SupplierAddress	Suppliercity
JR01	Rohit Bhalla	14, Floret Appt	Jaipur
PH02	Harish Nagar	A3, Gandhi Lane	Panjim
PS15	Subrat Ray	14/B, Surya Vihar	Panjim
JT50	Tina Chandran	12-H, Bank Colony	Jaipur

**Consumer**

C ID	SupplierID	CName	CAddress	Ccity
C101	JR01	Varun Mishra	5, Central Avenue	Delhi
C342	PH02	Sonia Singh	116, Block A	Delhi
C112	JR01	Prabhu S	2A, Andheri East	Mumbai
C008	PS15	Abhishek Das	B5, CS Terminals	Panjim
C035	JT50	Rahul Jain	13,B Mayur Vihar	Mumbai

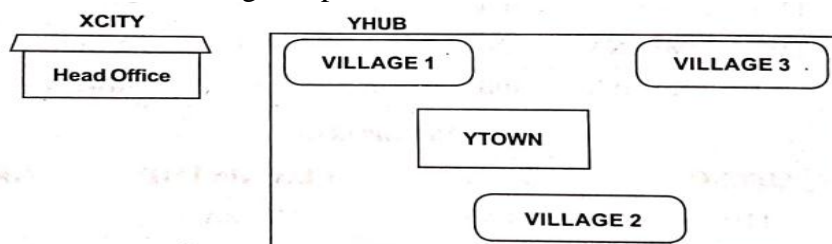
- (a) To display the C\_ID, Supplier name, Supplier Address, Consumer Name and Consumer Address for every Consumer
  - (b) To display Consumer details in ascending order of Consumer Name.
  - (c) To display number of Consumers from each city.
  - (d) To display the details of suppliers whose supplier city is 'Panjim' or 'Jaipur'.
- 12 (i) Differentiate between WAN and MAN. 2

OR

Define the following terms:

Remote Login, Domain Name Resolution

- (ii) Differentiate between client side scripting and server side scripting. 2
- 13 Intelligent Hub India is a knowledge community aimed to uplift the standard of skills and knowledge in the society. It is planning to setup its training centers in multiple towns and villages across India with its head offices in the nearest cities. They have created a model of their network with a city, a town and three villages as follows. 4
- As a network consultant, you have to suggest the best network related solutions for their issues/problems raised in (a) to (d), keeping in mind the distances between various locations and other given parameters.



**Shortest distance between various locations:**

<b>VILLAGE 1 to YTOWN</b>	<b>2 km</b>
<b>VILLAGE 2 to YTOWN</b>	<b>1.5 km</b>
<b>VILLAGE 3 to YTOWN</b>	<b>3 km</b>
<b>VILLAGE 1 to VILLAGE 2</b>	<b>3.5 km</b>
<b>VILLAGE 1 to VILLAGE 3</b>	<b>4.5 km</b>
<b>VILLAGE 2 to VILLAGE 3</b>	<b>3.5 km</b>
<b>CITY Head Office to YHUB</b>	<b>30 km</b>

Number of computers installed at various locations are as follows:

<b>YTOWN</b>	<b>100</b>
<b>VILLAGE 1</b>	<b>10</b>
<b>VILLAGE 2</b>	<b>15</b>
<b>VILLAGE 3</b>	<b>15</b>
<b>CITY OFFICE</b>	<b>5</b>

Note:

- In Villages, there are community centers, in which one room has been given as training center to this organization to install computers.
- The organization has got financial support from the government and top IT companies.

Answer the following questions:

- a. Suggest the most appropriate location of the SERVER in the YHUB (out of the 4 locations), to get the best and effective connectivity. Justify your answer.
- b. Suggest the cable layout and topology to efficiently connect various locations within the YHUB?
- c. Suggest the placement of the following device with justification
  - i. Repeater
  - ii. Hub/Switch
- d. Which service/protocol will be most helpful to conduct live interactions of Experts from Head Office and people at YHUB locations?