

CAREERS 360

PRACTICE **Series**

CBSE Class 12
(2024 - 2025)

Computer Science
Official Sample Paper
with Solutions

SAMPLE QUESTION PAPER (THEORY)
CLASS: XII SESSION: 2024-25
COMPUTER SCIENCE (083)

Time allowed: 3 Hours

Maximum Marks: 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.

Q No.	Section-A (21 x 1 = 21 Marks)	Marks
1.	State True or False: The Python interpreter handles logical errors during code execution.	(1)
2.	Identify the output of the following code snippet: <pre>text = "PYTHONPROGRAM" text=text.replace('PY','#') print(text)</pre> (A) #THONPROGRAM (B) ##THON#ROGRAM (C) #THON#ROGRAM (D) #YTHON#ROGRAM	(1)
3.	Which of the following expressions evaluates to False? (A) not(True) and False (B) True or False (C) not(False and True) (D) True and not(False)	(1)
4.	What is the output of the expression? str='International'	(1)

	<pre>print(str.split("\n"))</pre> <p>(A) ('l', 'ter', 'atio', 'al')</p> <p>(B) ['l', 'ter', 'atio', 'al']</p> <p>(C) ['l', 'n', 'ter', 'n', 'atio', 'n', 'al']</p> <p>(D) Error</p>	
5.	<p>What will be the output of the following code snippet?</p> <pre>str= "World Peace" print(str[-2::-2])</pre>	(1)
6.	<p>What will be the output of the following code?</p> <pre>tuple1 = (1, 2, 3) tuple2 = tuple1 tuple1 += (4,) print(tuple1 == tuple2)</pre> <p>(A) True</p> <p>(B) False</p> <p>(C) tuple1</p> <p>(D) Error</p>	(1)
7.	<p>If my_dict is a dictionary as defined below, then which of the following statements will raise an exception?</p> <pre>my_dict = {'apple': 10, 'banana': 20, 'orange': 30}</pre> <p>(A) my_dict.get('orange')</p> <p>(B) print(my_dict['apple', 'banana'])</p> <p>(C) my_dict['apple']=20</p> <p>(D) print(str(my_dict))</p>	(1)
8.	<p>What does the list.remove(x) method do in Python?</p> <p>(A) Removes the element at index x from the list</p> <p>(B) Removes the first occurrence of value x from the list</p> <p>(C) Removes all occurrences of value x from the list</p> <p>(D) Removes the last occurrence of value x from the list</p>	(1)
9.	<p>Which of the following statements will cause an error?</p> <p>(A) t=1,</p> <p>(B) t=(1,)</p> <p>(C) t=(1)</p> <p>(D) t=tuple(1)</p>	(1)
10.	<p>Write the missing statement to complete the following code:</p> <pre>file = open("example.txt", "r") data = file.read(100) _____ #Move the file pointer to the beginning of the file next_data = file.read(50) file.close()</pre>	(1)

11.	State whether the following statement is True or False: The finally block in Python is executed only if no exception occurs in the try block.	(1)
12.	What will be the output of the following code? <pre>c = 10 def add(): global c c = c + 2 print(c,end='#') add() c=15 print(c,end='%')</pre> <p>(A) 12%15# (B) 15#12% (C) 12#15% (D) 12%15#</p>	(1)
13.	Which SQL command can change the degree of an existing relation?	(1)
14.	What will be the output of the query? SELECT * FROM products WHERE product_name LIKE 'App%'; (A) Details of all products whose names start with 'App' (B) Details of all products whose names end with 'App' (C) Names of all products whose names start with 'App' (D) Names of all products whose names end with 'App'	(1)
15.	In which datatype the value stored is padded with spaces to fit the specified length. (A) DATE (B) VARCHAR (C) FLOAT (D) CHAR	(1)
16.	Which aggregate function can be used to find the cardinality of a table? (A) sum() (B) count() (C) avg() (D) max()	(1)
17.	Which protocol is used to transfer files over the Internet? (A) HTTP (B) FTP (C) PPP (D) HTTPS	(1)

18.	Which network device is used to connect two networks that use different protocols? (A) Modem (B) Gateway (C) Switch (D) Repeater	(1)
19.	Which switching technique breaks data into smaller packets for transmission, allowing multiple packets to share the same network resources.	(1)
	Q20 and Q21 are Assertion(A) and Reason(R) based questions. Mark the correct choice as: (A) Both A and R are true and R is the correct explanation for A (B) Both A and R are true and R is not the correct explanation for A (C) A is True but R is False (D) A is False but R is True	
20.	Assertion (A): In the case of positional arguments, the function call and function definition statements match in terms of the number and order of arguments. Reasoning (R): During a function call, positional arguments should precede keyword arguments in the argument list.	(1)
21.	Assertion (A): A SELECT command in SQL can have both WHERE and HAVING clauses. Reasoning (R): WHERE and HAVING clauses are used to check conditions, therefore, these can be used interchangeably.	(1)

Q No	Section-B (7 x 2=14 Marks)	Marks
22.	How is a mutable object different from an immutable object in Python? Identify one mutable object and one immutable object from the following: (1,2), [1,2], {1:1,2:2}, '123'	(2)
23.	Give two examples of each of the following: (I) Arithmetic operators (II) Relational operators	(2)
24.	If L1=[1,2,3,2,1,2,4,2, . . .], and L2=[10,20,30, . . .], then (I) A) Write a statement to count the occurrences of 4 in L1. OR	(2)

	<p>B) Write a statement to sort the elements of list L1 in ascending order.</p> <p>(II)</p> <p>A) Write a statement to insert all the elements of L2 at the end of L1.</p> <p style="text-align: center;">OR</p> <p>B) Write a statement to reverse the elements of list L2.</p>							
25.	<p>Identify the correct output(s) of the following code. Also write the minimum and the maximum possible values of the variable b.</p> <pre>import random a="Wisdom" b=random.randint(1,6) for i in range(0,b,2): print(a[i],end='#')</pre> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td>(A) W#</td> <td>(B) W#i#</td> <td></td> </tr> <tr> <td>(C) W#s#</td> <td>(D) W#i#s#</td> <td></td> </tr> </table>	(A) W#	(B) W#i#		(C) W#s#	(D) W#i#s#		(2)
(A) W#	(B) W#i#							
(C) W#s#	(D) W#i#s#							
26.	<p>Give an example of a table which has one Primary key and two alternate keys. How many Candidate keys will this table have?</p>	(2)						
27.	<p>(I)</p> <p>A) What constraint should be applied on a table column so that duplicate values are not allowed in that column, but NULL is allowed.</p> <p style="text-align: center;">OR</p> <p>B) What constraint should be applied on a table column so that NULL is not allowed in that column, but duplicate values are allowed.</p> <p>(II)</p> <p>A) Write an SQL command to remove the Primary Key constraint from a table, named MOBILE. M_ID is the primary key of the table.</p> <p style="text-align: center;">OR</p> <p>B) Write an SQL command to make the column M_ID the Primary Key of an already existing table, named MOBILE.</p>	(2)						
28.	<p>A) List one advantage and one disadvantage of star topology.</p> <p style="text-align: center;">OR</p> <p>B) Expand the term SMTP. What is the use of SMTP?</p>	(2)						

Section-C (3 x 3 = 9 Marks)

29. A) Write a Python function that displays all the words containing **@cmail** from a text file "Emails.txt".

OR

B) Write a Python function that finds and displays all the words longer than 5 characters from a text file "Words.txt".

(3)

30. A) You have a stack named **BooksStack** that contains records of books. Each book record is represented as a list containing **book_title**, **author_name**, and **publication_year**. Write the following user-defined functions in Python to perform the specified operations on the stack **BooksStack**:

(I) **push_book(BooksStack, new_book)**: This function takes the stack **BooksStack** and a new book record **new_book** as arguments and pushes the new book record onto the stack.

(II) **pop_book(BooksStack)**: This function pops the topmost book record from the stack and returns it. If the stack is already empty, the function should display "Underflow".

(III) **peek(BookStack)**: This function displays the topmost element of the stack without deleting it. If the stack is empty, the function should display 'None'.

OR

B) Write a Python program to input an integer and display all its prime factors in descending order, using a stack. For example, if the input number is 2100, the output should be: 7 5 5 3 2 2 (because prime factorization of 2100 is 7x5x5x3x2x2)

Hint: *Smallest factor, other than 1, of any integer is guaranteed to be prime.*

(3)

31. Consider the table **ORDERS** as given below, and write the following queries:

O_Id	C_Name	Product	Quantity	Price
1001	Jitendra	Laptop	1	12000
1002	Mustafa	Smartphone	2	10000
1003	Dhwani	Headphone	1	1500

(3)

Note: *The table contains many more records than shown here.*

A)

(I) To display the total Quantity for each Product, excluding Products with total Quantity less than 5.

(II) To display the orders table sorted by total price in descending order.

(III) To display the distinct customer names from the Orders table.

OR

	<p>B)</p> <p>(I) To display the total number of orders quantity-wise.</p> <p>(II) To delete all the orders where the Product is Laptop.</p> <p>(III) Display the sum of Price of all the orders for which the quantity is null.</p>	
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Q. No.	SECTION D (4 X 4 = 16 Marks)	Marks					
32.	<p>A)</p> <p>I. When is ZeroDivisionError exception raised in Python?</p> <p>II. Give an example code to handle ZeroDivisionError? The code should display the message "Division by Zero is not allowed" in case of ZeroDivisionError exception, and the message "Some error occurred" in case of any other exception.</p> <p style="text-align: center;">OR</p> <p>B)</p> <p>I. When is NameError exception raised in Python?</p> <p>II. Give an example code to handle NameError? The code should display the message "Some name is not defined" in case of NameError exception, and the message "Some error occurred" in case of any other exception.</p>	(4)					
33.	<p>A csv file "Happiness.csv" contains the data of a survey. Each record of the file contains the following data:</p> <ul style="list-style-type: none"> • Name of a country • Population of the country • Sample Size (<i>Number of persons who participated in the survey in that country</i>) • Happy (<i>Number of persons who accepted that they were Happy</i>) <p>For example, a sample record of the file may be: Signiland, 5673000, 5000, 3426</p> <p>Write the following Python functions to perform the specified operations on this file:</p> <p>(I) Read all the data from the file and display all those records for which the population is more than 5000000.</p> <p>(II) Count the number of records in the file.</p>	(4)					
34.	<p>Saman has been entrusted with the management of Law University Database. He needs to access some information from FACULTY and COURSES tables for a survey analysis. Help him extract the following information by writing the desired SQL queries as mentioned below.</p> <p style="text-align: center;">Table: FACULTY</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">F_ID</td> <td style="text-align: center;">FName</td> <td style="text-align: center;">LName</td> <td style="text-align: center;">Hire_Date</td> <td style="text-align: center;">Salary</td> </tr> </table>	F_ID	FName	LName	Hire_Date	Salary	(4)
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

Table: **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) To display complete details (from both the tables) of those Faculties whose salary is less than 12000.
- (II) To display the details of courses whose fees is in the range of 20000 to 50000 (both values included).
- (III) To increase the fees of all courses by 500 which have "Computer" in their Course names.
- (IV) (A) To display names (FName and LName) of faculty taking System Design.

OR

- (B) To display the Cartesian Product of these two tables.

35.

A table, named STATIONERY, in ITEMDB database, has the following structure:

```

+-----+-----+
| Field | Type   |
+-----+-----+
| itemNo | int(11) |
| itemName | varchar(15) |
| price | float   |
| qty   | int(11) |
+-----+-----+

```

Write the following Python function to perform the specified operation:

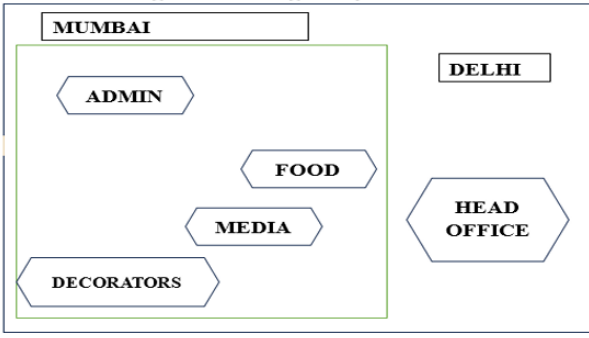
AddAndDisplay(): To input details of an item and store it in the table STATIONERY. The function should then retrieve and display all records from the STATIONERY table where the Price is greater than 120.

Assume the following for Python-Database connectivity:

Host: localhost, User: root, Password: Pencil

(4)

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Q.No.	SECTION E (2 X 5 = 10 Marks)	Marks									
36.	<p>Surya is a manager working in a recruitment agency. He needs to manage the records of various candidates. For this he wants the following information of each candidate to be stored:</p> <p style="margin-left: 40px;">Candidate_ID – integer Candidate_Name – string Designation – string Experience – float</p> <p>You, as a programmer of the company, have been assigned to do this job for Surya. Suggest:</p> <p>(I) What type of file (text file, csv file, or binary file) will you use to store this data? Give one valid reason to support your answer.</p> <p>(II) Write a function to input the data of a candidate and append it in the file that you suggested in part (I) of this question.</p> <p>(III) Write a function to read the data from the file that you suggested in part (I) of this question and display the data of all those candidates whose experience is more than 10.</p>	(5)									
37.	<p>Event Horizon Enterprises is an event planning organization. It is planning to set up its India campus in Mumbai with its head office in Delhi. The Mumbai campus will have four blocks/buildings - ADMIN, FOOD, MEDIA, DECORATORS. You, as a network expert, need to suggest the best network-related solutions for them to resolve the issues/problems mentioned in points (I) to (V), keeping in mind the distances between various blocks/buildings and other given parameters.</p> <div style="text-align: center;">  </div> <p style="text-align: center;">Block to Block distances (in Mtrs.)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>From</th> <th>To</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td>ADMIN</td> <td>FOOD</td> <td>42 m</td> </tr> <tr> <td>ADMIN</td> <td>MEDIA</td> <td>96 m</td> </tr> </tbody> </table>	From	To	Distance	ADMIN	FOOD	42 m	ADMIN	MEDIA	96 m	(5)
From	To	Distance									
ADMIN	FOOD	42 m									
ADMIN	MEDIA	96 m									

ADMIN	DECORATORS	48 m
FOOD	MEDIA	58 m
FOOD	DECORATORS	46 m
MEDIA	DECORATORS	42 m

Distance of Delhi Head Office from Mumbai Campus = 1500 km
Number of computers in each of the blocks/Center is as follows:

ADMIN	25
FOOD	18
MEDIA	30
DECORATORS	20
DELHI HEAD OFFICE	18

- (I) Suggest the most appropriate location of the server inside the MUMBAI campus. Justify your choice.
- (II) Which hardware device will you suggest to connect all the computers within each building?
- (III) Draw the cable layout to efficiently connect various buildings within the MUMBAI campus. Which cable would you suggest for the most efficient data transfer over the network?
- (IV) Is there a requirement of a repeater in the given cable layout? Why/ Why not?
- (V) A) What would be your recommendation for enabling live visual communication between the Admin Office at the Mumbai campus and the DELHI Head Office from the following options:
 - a) Video Conferencing
 - b) Email
 - c) Telephony
 - d) Instant Messaging

OR

- B) What type of network (PAN, LAN, MAN, or WAN) will be set up among the computers connected in the MUMBAI campus?

MARKING SCHEME
Class: XII Session: 2024-25
Computer Science (083)

Time allowed: 3 Hours

Maximum Marks: 70

Q No.	SECTION A (21X1=21)	Marks
1.	False <i>(1 mark for correct answer)</i>	(1)
2.	(A) #THONPROGRAM <i>(1 mark for correct answer)</i>	(1)
3.	(A) not (True) and False <i>(1 mark for correct answer)</i>	(1)
4.	(B) ['l', 'ter', 'atio', 'al'] <i>(1 mark for correct answer)</i>	(1)
5.	ce lo <i>(1 mark for correct answer)</i>	(1)
6.	(B) False <i>(1 mark for correct answer)</i>	(1)
7.	(B) print(my_dict['apple', 'banana']) <i>(1 mark for correct answer)</i>	(1)
8.	(B) Removes the first occurrence of value x from the list <i>(1 mark for correct answer)</i>	(1)
9.	(D) t=tuple(1) <i>(1 mark for correct answer)</i>	(1)
10.	file.seek(0) (OR file.seek(0,0)) <i>(1 mark for correct answer)</i>	(1)
11.	False <i>(1 mark for correct answer)</i>	(1)
12.	(C) 12#15% <i>(1 mark for correct answer)</i>	(1)
13.	Alter (or Alter Table) <i>(1 mark for correct answer)</i>	(1)
14.	(A) Details of all products whose names start with 'App'	(1)

	<i>(1 mark for correct answer)</i>	
15.	(D) CHAR <i>(1 mark for correct answer)</i>	(1)
16.	(B) count() <i>(1 mark for correct answer)</i>	(1)
17.	(B) FTP <i>(1 mark for correct answer)</i>	(1)
18.	(B) Gateway <i>(1 mark for correct answer)</i>	(1)
19.	(B) Packet Switching <i>(1 mark for correct answer)</i>	(1)
20.	(B) Both A and R are true and R is not the correct explanation for A. <i>(1 mark for correct answer)</i>	(1)
21.	(C) A is True but R is False. <i>(1 mark for correct answer)</i>	(1)

Q No.	SECTION B (7 X 2 =14)	Marks
22.	A mutable object can be updated whereas an immutable object cannot be updated. Mutable object: [1,2] or {1:1,2:2} (Any one) Immutable object: (1,2) or '123' (Any one) <i>(1 mark for correct difference)</i> <i>(½ x 2 = 1 Mark for selecting correct objects)</i>	(2)
23.	(I) Arithmetic operators: +, - (II) Relational operators: >, >= <i>(½ x 4 = 2 Marks for each correct operator)</i>	(2)
24.	(I) A) L1.count(4) OR B) L1.sort() <i>(1 mark for correct answer)</i> (II) A) L1.extend(L2)	(2)

	OR																	
	B) L2.reverse() (1 mark for correct answer)																	
25.	(A), (C) (½ x 2 = 1 Mark) Minimum and maximum possible values of the variable b: 1,6 (½ x 2 = 1 Mark)	(2)																
26.	<p style="text-align: center;">Table: Student</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>ADMN</th> <th>RollNo</th> <th>Name</th> <th>PhoneNo</th> </tr> </thead> <tbody> <tr> <td>124</td> <td>1</td> <td>Chavi</td> <td>989899</td> </tr> <tr> <td>235</td> <td>2</td> <td>Arpita</td> <td>931124</td> </tr> <tr> <td>276</td> <td>3</td> <td>Chavi</td> <td>972457</td> </tr> </tbody> </table> <p>Primary key: ADMN Alternate keys: RollNo, PhoneNo Total Candidate keys: 3 (1 mark for the correct table) (1 mark for number of candidate keys)</p>	ADMN	RollNo	Name	PhoneNo	124	1	Chavi	989899	235	2	Arpita	931124	276	3	Chavi	972457	(2)
ADMN	RollNo	Name	PhoneNo															
124	1	Chavi	989899															
235	2	Arpita	931124															
276	3	Chavi	972457															
27.	<p>(I)</p> <p>A) UNIQUE</p> <p style="text-align: center;">OR</p> <p>B) NOT NULL (1 mark for correct answer)</p> <p>(II)</p> <p>A) ALTER TABLE MOBILE DROP PRIMARY KEY; OR B) ALTER TABLE MOBILE ADD PRIMARY KEY (M_ID); (1 mark for correct answer)</p>	(2)																
28.	<p>A) Advantage: Network extension is easy. Disadvantage: Failure of switch/hub results in failure of the network. (1 mark for correct Advantage) (1 mark for correct Disadvantage)</p> <p style="text-align: center;">OR</p> <p>B) SMTP: Simple Mail Transfer Protocol.</p>	(2)																

	<p>SMTP is used for sending e-mails from client to server.</p> <p><i>(1 mark for correct expansion)</i></p> <p><i>(1 mark for correct usage)</i></p>	
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Q No.	SECTION C (3 X 3 = 9)	Marks
29.	<p>(A)</p> <pre>def show(): f=open("Email.txt",'r') data=f.read() words=data.split() for word in words: if '@cmail' in word: print(word,end=' ') f.close()</pre> <p><i>(½ mark for correct function header)</i> <i>(½ mark for correctly opening the file)</i> <i>(½ mark for correctly reading from the file)</i> <i>(½ mark for splitting the text into words)</i> <i>(1 mark for correctly displaying the desired words)</i></p> <p style="text-align: center;">OR</p> <p>(B)</p> <pre>def display_long_words(): with open("Words.txt", 'r') as file: data=file.read() words=data.split() for word in words: if len(word)>5: print(word,end=' ') </pre> <p><i>(½ mark for correct function header)</i> <i>(½ mark for correctly opening the file)</i> <i>(½ mark for correctly reading from the file)</i> <i>(½ mark for splitting the text into words)</i> <i>(1 mark for correctly displaying the desired words)</i></p>	(3)

<p>30.</p>	<p>(A)</p> <p>(I)</p> <pre>def push_book(BooksStack, new_book): BooksStack.append(new_book)</pre> <p>(II)</p> <pre>def pop_book(BooksStack): if not BooksStack: print("Underflow") else: return(BooksStack.pop())</pre> <p>(III)</p> <pre>def peep(BooksStack): if not BooksStack: print("None") else: print(BooksStack[-1])</pre> <p><i>(3x1 mark for correct function body; No marks for any function header as it was a part of the question)</i></p> <p style="text-align: center;">OR</p> <p>(B)</p> <pre>n=int(input("Enter an integer: ")) s=[] #stack f=2 while n>1: if n%f==0: s.append(f) n//=f else: f+=1 while s: print(s.pop(),end=' ')</pre> <p><i>(½ mark for correct input)</i> <i>(½ mark for correctly declaring an empty stack)</i> <i>(1 mark for correctly pushing the factors on the stack)</i> <i>(1 mark for correctly popping and displaying the factors)</i></p>	<p>(3)</p>
<p>31.</p>	<p>(A)</p> <p>(I) select Product, sum(Quantity) from orders group by product having sum(Quantity)>=5;</p> <p>(II) select * from orders order by Price desc;</p> <p>(III) select distinct C_Name from orders;</p> <p><i>(3x 1 mark for each correct query)</i></p>	<p>(3)</p>

OR	
(B)	(I) select quantity, count(*) from orders group by quantity; (II) delete from orders where product = "Laptop"; (III) select sum(price) from orders where quantity is null; (3x 1 mark for each correct query)

Q No.	SECTION D (4 X 4 = 16)	Marks
32.	<p>(A)</p> <p>(I) ZeroDivisionError is raised when a statement tries to divide a number by zero. (1 Mark for correct answer)</p> <p>(II)</p> <pre>try: a=int(input("Enter an integer: ")) print("Reciprocal of the number =",1/a) except ZeroDivisionError: print("Division by Zero is not allowed") except: print("Some Error Ocurred")</pre> <p>(3x 1 mark for each correct part – try, except, except)</p> <p style="text-align: center;">OR</p> <p>(B)</p> <p>(I) NameError is raised when an undefined identifier is used in the program. (1 Mark for correct answer)</p> <p>(II)</p> <pre>try: a=eval(input("Enter an integer: ")) print("Reciprocal of the number =",1/a) except NameError: print("Some name is not defined") except: print("Some Error Ocurred")</pre> <p>(3x1 Mark for each correct part – try, except, except)</p>	(4)
33.	<p>(I)</p> <pre>def show(): import csv f=open("happiness.csv",'r') records=csv.reader(f) next(records, None) #To skip the Header row for i in records: if int(i[1])>5000000: print(i)</pre>	(4)

	<p>f.close() <i>(½ mark for opening in the file in right mode)</i> <i>(½ mark for correctly creating the reader object)</i> <i>(½ mark for correctly checking the condition)</i> <i>(½ mark for correctly displaying the records)</i></p> <p>(II)</p> <pre>def Count_records(): import csv f=open("happiness.csv",'r') records=csv.reader(f) next(records, None) #To skip the Header row count=0 for i in records: count+=1 print(count) f.close()</pre> <p><i>(½ mark for opening in the file in right mode)</i> <i>(½ mark for correctly creating the reader object)</i> <i>(½ mark for correct use of counter)</i> <i>(½ mark for correctly displaying the counter)</i></p> <p>Note (for both parts (I) and (II)):</p> <p>(i) Ignore import csv as it may be considered the part of the complete program, and there is no need to import it in individual functions.</p> <p>(ii) Ignore <i>next(records, None)</i> as the file may or may not have the Header Row.</p>	
34.	<p>(I) Select * from FACULTY natural join COURSES where Salary<12000; (II) Select * from courses where fees between 20000 and 50000; (III) Update courses set fees=fees+500 where CName like '%Computer%'; (IV) (A) Select FName, LName from faculty natural join courses where Came="System Design";</p> <p style="text-align: center;">OR</p> <p>(B) Select * from FACULTY, COURSES;</p> <p><i>(4x1 mark for each correct query)</i></p>	(4)
35.	<pre>def Add_Item(): import mysql.connector as mycon mydb=mycon.connect(host="localhost",user="root", passwd="Pencil",database="ITEMDB") mycur=mydb.cursor() no=input("Enter Item Number: ") nm=input("Enter Item Name: ") pr=input("Enter price: ") qty=input("Enter qty: ") query="INSERT INTO stationery VALUES ({},'{}',{},{})"</pre>	(4)

	<pre> query=query.format(no,nm,pr,qty) mycur.execute(query) mydb.commit() mycur.execute("select * from stationery where price>120") for rec in mycur: print(rec) </pre> <p> <i>(½ mark for correctly importing the connector object)</i> <i>(½ mark for correctly creating the connection object)</i> <i>(½ mark for correctly creating the cursor object)</i> <i>(½ mark for correctly inputting the data)</i> <i>(½ mark for correct creation of first query)</i> <i>(½ mark for correctly executing the first query with commit)</i> <i>(½ mark for correctly executing the second query)</i> <i>(½ mark for correctly displaying the data)</i> </p>	
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Q No.	SECTION E (2 X 5 = 10)	Marks
36.	<p>Note: For part (I), the student can mention any type of file with valid reason to support the choice. Answer with valid supporting reason should be considered Correct, and without a valid reason should be considered incorrect.</p> <p>(I) Text file: A text file allows for easy maintenance of data, as it can be opened and manipulated with any text editor also. <i>(1 mark for correct answer)</i></p> <p>(II)</p> <pre> def append(): with open("Candidates.txt",'a') as f: C_id=input("Enter Candidate ID: ") C_nm=input("Enter Candidate name: ") C_dg=input("Enter Designation: ") C_ex=input("Enter Experience: ") rec=C_id+','+C_nm+','+C_dg+','+C_ex+'\n' f.write(rec) </pre> <p> <i>(½ mark for opening in the file in right mode)</i> <i>(½ mark for correctly inputting the data)</i> <i>(½ mark for correctly writing the record in the file)</i> <i>(½ mark for correctly closing the file, or ½ mark if the file was opened using with)</i> </p> <p>(II)</p> <pre> def display(): with open("Candidates.txt") as f: for rec in f: data=rec.split(',') if float(data[-1])>10: </pre>	(5)

print(rec.strip()) #OR print(rec)

(½ mark for opening the file in right mode)

(½ mark for correctly reading the data)

(½ mark for correctly checking the condition)

(½ mark for correctly displaying the records)

OR

(I) CSV File: A CSV file allows for easy maintenance of data, as it can be opened and manipulated with any spreadsheet application also.

(1 mark for correct answer)

(II)

```
def append():
    with open("Candidates.csv",'a',newline=") as f:
        C_id=input("Enter Candidate ID: ")
        C_nm=input("Enter Candidate name: ")
        C_dg=input("Enter Designation: ")
        C_ex=input("Enter Experience: ")
        rec=[C_id,C_nm,C_dg,C_ex]
        w=csv.writer(f)
        w.writerow(rec)
```

(½ mark for opening in the file in right mode)

(½ mark for correctly inputting the data)

(½ mark for correctly writing the record in the file)

(½ mark for correctly closing the file, or ½ mark if the file was opened using with)

(III)

```
def display():
    with open("Candidates.csv") as f:
        r=csv.reader(f)
        for rec in r:
            if float(rec[-1])>10:
                print(rec)
```

(½ mark for opening the file in right mode)

(½ mark for correctly reading the data)

(½ mark for correctly checking the condition)

(½ mark for correctly displaying the records)

OR

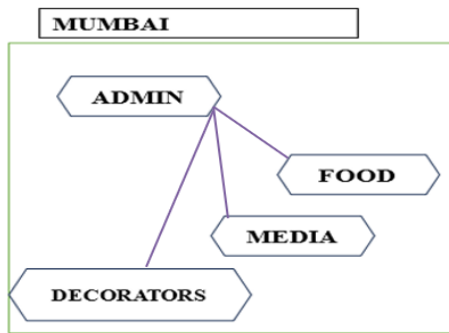
(I) Binary File: A binary file cannot be opened and manipulated with any general purpose application, and hence, it prevents any unintentional change in the data.

(1 mark for correct answer)

(II)

```
def append():
```

	<pre> with open("Candidates.dat",'ab') as f: C_id=int(input("Enter Candidate ID: ")) C_nm=input("Enter Candidate name: ") C_dg=input("Enter Designation: ") C_ex=float(input("Enter Experience: ")) rec=[C_id,C_nm,C_dg,C_ex] pickle.dump(rec,f) </pre> <p><i>(½ mark for opening in the file in right mode)</i> <i>(½ mark for correctly inputting the data)</i> <i>(½ mark for correctly writing the record in the file)</i> <i>(½ mark for correctly closing the file, or ½ mark if the file was opened using with)</i></p> <p>(III)</p> <pre> def display(): with open("Candidates.dat",'rb') as f: while True: try: rec=pickle.load(f) if rec[-1]>10: print(rec) except EOFError: break </pre> <p><i>(½ mark for opening the file in right mode)</i> <i>(½ mark for correctly reading the data)</i> <i>(½ mark for correctly checking the condition)</i> <i>(½ mark for correctly displaying the records)</i></p>	
37.	<p>(I) MEDIA Block as it has the maximum number of Computers. OR ADMIN Block as ADMIN block is generally the most secure. <i>(1 mark for correct answer)</i></p> <p>(II) Switch <i>(1 mark for correct answer)</i></p> <p>(III)</p>	(5)



(or Any other correct layout)

Cable: Optical Fibre

($\frac{1}{2}$ mark for correct layout + $\frac{1}{2}$ mark for correct table type)

(IV) There is no requirement of the Repeat as the optical fibre cable used for the network can carry the data to much longer distances than within the campus.

(1 mark for correct answer)

(V) (A) a) Video Conferencing

OR

(B) LAN

(1 mark for correct answer)