



Roll No.	
Name	
Class & Section	

**APEEJAY COMMON ANNUAL EXAMINATION, 2019-20**  
**COMPUTER SCIENCE (Code No. 083)**

**Time Allowed : 3.00 Hrs.**

**Class – XI**

**Maximum Marks : 70**

**General Instructions :**

- ✦ *All questions are compulsory.*
  - ✦ *Question paper is divided into 4 sections A, B, C and D.*
- Section-A : Unit 1 - Computer Systems and Organisation*
- Section-B : Unit 2 - Computational Thinking and Programming*
- Section-C : Unit 3 - Data Management - 1*
- Section-D : Unit 4 - Society, Law and Ethics - 1*

**Section-A**

**(10)**

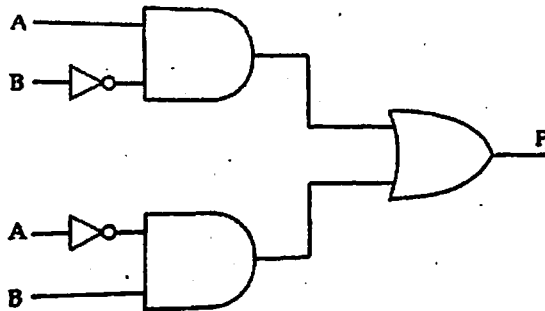
1. (a) Differentiate between compiler and interpreter. 1
- (b) Enlist two key features of parallel computing which makes it mandatory for the functioning of present computer system. 1

**OR**

Give one example each of Private and Public Cloud.

- (c) The correct arrangement of units of memory is 1
- (i) B>MB>KB>GB (ii) MB> B > KB> GB
- (iii) GB>MB>KB>B (iv) KB>GB>MB>B
- (d) Head Office of ABC Company has to print multiple copies of the customer bills. Also, it has to prepare reports to be presented to the management. Justify the printer they should use for the above two requirements. 1
- (e) State DeMorgan's Laws of Boolean Algebra and verify them using truth table. 2

- (f) Write the Boolean expression of the given Logical circuit. Also, write the name of the equivalent gate with its symbol which produces the same output as the given circuit. 2



OR

Draw the Logic Circuit of the following Boolean Expression using only NAND Gates :

$$X.Y + Y.Z$$

- (g) Do the following conversion : 2

(i)  $(4E3)_{16} = (\dots\dots\dots)_2$

(ii)  $(101110001)_2 = (\dots\dots\dots)_{10}$

Section-B

(35)

2. (a) Which of the following can be used as valid identifier(s) in Python? 1

(i) 4thSum

(ii) Total

(iii) Number#

(iv) Datal

- (b) Illustrate the following 2

(i) `id()` and `type()` of a variable

(ii) Comments as the Single Line and Multiline/Continuation statements

- (c) Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. 2

3. Find and write the output of the following Python code : 3
- (i) What is pdb? Which method of pdb module is used to start tracing a program? 1

```
print("Result",1/B)
B=eval(input("Enter B: "))
```

- 2
- (h) The following code is written by Gaurika of Class IX for finding the reciprocal. The code gives the reciprocal for some inputs but it gives errors for the some other inputs. As her Senior you are required to help her and write the correct code which runs successfully every time. 2
- (g) Draw flowchart to find out and display the sum of first n natural numbers, where n is a number entered by the user. 1

- (f) Write Python statements to extract from the given string Str="Information" the following words : 1
- (i) mat
- (ii) ion
- (e) Illustrate the differences between : 2
- (i) list and tuple
- (ii) pop() and remove() methods of list

- (d) Write the function / method to do the following : 1
- (i) To check for a digit or alphabet
- (ii) To split the string at the first occurrence of a separator.
- (e) Illustrate the differences between : 2

```
W=90
while (W>60)
R=R+W-50
if (R=20):
print("Lower Range")
elif (R=30):
print("Middle Range")
else
print("Higher Range")
W=W-5
```

- (e) What are the possible outcome(s) executed from the following code? Also specify the maximum and minimum values that can be assigned to variable Guess.

```

print tot)
tot+=d[x]
for x in d:
    tot=0

```

- (d) `d={"Chavi": 10, "Geeta":25, "Ravish":20}`  
`print(Str2)`

```

I=I+1
Str2=Str2+"*"
else:
    Str2=Str2+(Str1[I-1])
elif Str1[I]>="0" and Str1[I]<="9":
    Str2=Str2+Str1[I+1]
if Str1[I]>="A" and Str1[I]<="M":
    while I<len(Str1):

```

- (c) `Str1="SAME20"`  
`print(x,y)`

```

x,y,x=x+2,y+7,x+10
x,y=7,2
print("RESULT : 23 >= 25 : ", 25 - 2.5 >= 23 + 1.5)

```

- (b) `print("14 ** 3//2 = ", 2**4%3+6//5.0)`  
`print()`

```

print("end = ")
for I in range(1, Val%9):

```

for Val in Values:

- (a) Values=[10,20,30,40]

2

3

2

```

import random
Guess=random.randint(0,4)
COLOR=["BLUE","PINK","GREEN","RED"]
for I in COLOR:
    for J in range(1,Guess):
        print(I,end="")
    print()

```

(i)	(ii)	(iii)	(iv)
BLUE	BLUE	PINK	BLUEBLUE
PINK	BLUEPINK	PINKGREEN	PINKPINK
GREEN	BLUEPINKGREEN	GREENRED	GREENGREEN
RED	BLUEPINKGREENRED		REDRED

4. (a) Consider the following randomly ordered numbers stored in a list : 3

14,33,27,35,10

Show the contents of list after the First, Second and Third pass of the bubble sort algorithm used for arranging in ascending order.

- (b) Write a Python code to display all the state names from a list of STATES, which are starting with alphabet M. 2

For example:

If the list STATES contains

["MP", "UP", "WB", "TN", "MH", "DL", "BH", "RJ", "HR"]

The following output should get displayed

MP

MH

MZ

- (c) For a given NumList of Class XI marks, write a code in Python to count and display the frequency of marks in the NumList using a dictionary. 3

For example:

If NumList contains 10,20,10,15,15,20,20,20 elements then the display is

10 : 2

20 : 4

15 : 2

- (d) Write a code in Python to find and display the prime numbers between 2 to N. 2

### Section-C

(15)

5. (a) What is the purpose of SQL? Also, write its full form. 2
- (b) Mr. Sunil created a table "BOOK" in MySQL. He forget to set the PRIMARY KEY for the table. Which command should he use to set it for the field "Bid"?" 1
- (c) Ms. Pari, a beginner in SQL is not able to understand the difference between DROP TABLE and DELETE command. You are required her to illustrate their difference and make her understand the same. 2
- (d) Consider the following table PRODUCT and write SQL commands for the following : 4

### PRODUCT

PCODE	PNAME	COMPANY	PRICE	STOCK	MANUFACTURE	WARRANTY
P001	TV	BPL	10000	200	2008-01-12	3
P002	TV	SONY	12000	150	2007-03-23	4
P003	PC	LENOVO	39000	100	2008-04-09	4
P004	PC	COMPAQ	38000	120	2009-06-20	2
P005	CAMERA	SONY	18000	250	2007-03-23	3

- (i) To find stock value of the SONY company where stock value is sum of the products of price and stock.
- (ii) To show the details of products whose stock is in the range 100 and 150.
- (iii) To count the number of PRODUCTS which are manufactured in 2009.
- (iv) To show the PRODUCT name which are not supplied by SONY and COMPAQ.

- (e) Rishi, a class XI student has given following commands for the given purposes : 2
- (i) To add a new column "Rating" :  
`update table library add column rating varchar(20);`
- (ii) To give an increase of 50 Rs. to all the books:  
`alter library set price=price+50;`
- Check if the above given SQL commands will be able to achieve the desired task or not. Justify your answer. Suggest the correction(s) if required.
- (f) Which SQL keyword is used to retrieve only unique values? 1
- (i) UNIQUE (ii) DISTINCT  
 (iii) OR (iv) NULL
- (g) What do you understand by NoSQL databases? Write any two of its features. Give one example. 3

#### Section-D

(10)

6. (a) What is the basic difference between Computer Worm and Trojan Horse? 1
- (b) What do you mean by Cyber Trolls and Cyber Bullying? 2
- (c) Define in the context of Computer Security the terms Eavesdropping and Phishing. 2
- (d) List any four useful tips for safely browsing the web. 2
- (e) Identify the type of Cyber crime for the following situations: 1
- (i) A person complains that his/her debit/credit card is safe with him still some body has done shopping/ATM transaction on this card.
- (ii) A person complains that somebody has created a fake profile on Facebook and defaming his/her character with abusive comments and pictures.
- (f) Ms. Sumita Srivastava is an IT expert and a freelancer. She recently used her skills to access the Admin password for the network server of ABC Technology Ltd. and provided confidential data of the organization to its CEO, informing him about the vulnerability of their network security. Out of the following options (i) to (iv), which one most appropriately defines Ms. Sumita? 2
- Justify the reason for your chosen option:
- (i) Hacker (ii) Cracker  
 (iii) Operator (iv) Network Admin