



INDIAN SCHOOL SOHAR
TERM II EXAMINATION (2019-20)
COMPUTER SCIENCE

CLASS: XI
DATE: 12/01/2020

MAX. MARKS: 70
DURATION: 3 HRS

Instructions:

- a. All the questions are compulsory.
b. Answer the questions after carefully reading the text.

1. Answer the following questions:

- a. What are state transition diagrams? 1
- b. What is code tracing? 1
- c. Differentiate between list and dictionary 2
- d. Explain packing and unpacking tuples with example. 2
- e. What is the difference between following two expressions, if **lst** is given as [1,3,5] 1
- i) $lst*3$ ii) $lst*=3$
- f. When do these exceptions occur? 2
- i) Type error ii) Name error
- g. Write the equivalent python expression: 1
- i) $x = \sqrt{(a-b)^2 + (c-d)^2}$ ii) $A = \frac{1}{3}b^2h$
- h. Evaluate: $19 \% 4 - 17 / 2 * 3 + 2 ** 3 + 5 // 2$ 1

2.

- a. Define throughput. 1
- b. Expand ISCII and ASCII 1
- c. Convert the following: 1
- i) $(4A8C)_{16}$ to $()_2$ ii) $(75.25)_{10}$ to $()_8$
- d. What is Application software? What are the categories of application software? 2
- e. Prove that $X.(X+Y)=X$ by truth table method. 2
- f. Draw the logic circuit diagram for the following expression: 2
- $y = \overline{A} \overline{B} \overline{C} D + \overline{A} B \overline{C} D + \overline{A} B C \overline{D} + ABCD$
- g. Add the following binary numbers: 1
- i) 110101 and 101111 ii) 110111.001 and 100101.010

3.

- a. Predict the output after execution of the following code: 2
- i) $A = [2,4,6,8,10]$
 $L = \text{len}(A)$

```

S=0
for i in range(1,L,2):
    S+=A[i]
print("Sum=",S)

```

ii) a,b=10,25

2

```

if a>8 and b<12:
    c=(a-b)*(a+b)
    a=b
elif a<15 and b>20:
    c=a*b+a//b
    b=a
else:
    print("no change in value")
print(b,c,sep=",")

```

b. Rewrite the following code using 'while' loop:

2

```

for i in range(1,10):
    if i%3==0:
        print(i)

```

c. Find the errors from the following code segment and rewrite the corrected code:

2

```

i) l=int(input("enter the length"))
if l<=0 :
    print("incorrect ",end" ")
    print("dimension")
else:
    print("area is"a)

```

ii) Lst=[11,12,13,14]

2

```

Lst.pop(12)
Lst[2]==34
L=lst.reverse
print(L)

```

d. Write a program in python to check whether a given number is Armstrong number or not.

2

(eg:153=1³+5³+3³)

e. Write a program to sort a list of elements using insertion sort.

2

f. Draw the flowchart to calculate the factorial of a number.

2

g. Write code to perform the following: 1

```
D={"Niya":15,"Hema":11,"Ginu":22,"Ravi":35}
```

- i) Add a new element with key-“Johny” and age 50
- ii) To display all the names of the dictionary

h. Write a python script to input a number from user to print its multiplication table up to 10. 2

(Example: if input is 5, then output will be

5x1=5

5x2=10....and so onup to 5x10=50)

i. A shop deals with footwear and apparels. Write a program to calculate total selling price after levying the GST. A discount is given based on the mode of payment. The GST rates areas per the following table:

Item	GST rate
Footwear<=500 (for each pair)	5% of rate
Footwear>500(for each pair)	18%of rate
Apparels<=1000 (per piece)	5% of rate
Apparels>1000 (per piece)	12% of rate

i) The user should input the item and the bill amount 1

ii) Calculate and display the GST and Net Amount. (Net Amount= Bill Amount+ GST Amount) 2

j. Write a program to print the sum of the following series: 2

(x can be any value from user)

$$1 + \frac{x^2}{2} + \frac{x^3}{3} + \frac{x^4}{4} + \dots + \frac{x^n}{n}$$

4.

a. Define Foreign Key 1

b. Write any four advantages of NoSQL databases. 2

c. Create a table Mobile based on the structure given below: 2

Mobile: Table structure

Column name	Data Type	Constraint
Mid	Char(5)	Primary key
Manufacturer	Varchar(25)	Not null
Mname	Varchar(15)	
Price	Integer(6)	
MfDate	Date	

Mobile: Table

Mid	Manufacturer	Mname	Price	MfDate
MB101	Samsung	Galaxy	7500	2013-01-12
MB102	Nokia	N1100	3000	2011-12-10
MB103	Sony	XperiaM	6000	2017-01-26
MB104	Samsung	Note8	8600	
MB105	Oppo	SelfieEx	7500	2010-03-29

Stock: Table

Sno	Mid	MQty	MSupplier
S001	MB104	450	New Vision
S002	MB103	250	A-One Mobiles
S003	MB101	50	Classic Mobile Store
S004	MB103	150	Mobile Centre

d. Write SQL Commands for the following:

- i) Insert a new row with the following values into the Mobile table:
MB106, Nokia, 7000 1
- ii) Display the names and price of mobiles that are manufactured after 1stJan 2015. 1
- iii) List the name and supplier of Samsung and nokia mobiles in ascending order of price. 1
- iv) List the id, name, price of mobiles whose quantity is in range 200 to 500. 1
- v) Remove the details of mobiles whose manufacturing date is not known. 1
- vi) Display a report: <Mname> manufactured in <MFDate> cost rs <price> 1
- vii) List the id, name and supplier of all mobiles whose name contains 'e' as a character. 1

e. Create a database "newdb" in MongoDB having a collection "People" and insert the following data in it: name:Albin, age:21, salary:15000 1

f. Write query to display names without id. 1

g. Update the salary of Albin to 25000 1

5.

- a. What do you mean by identity theft? 1
- b. What is firewall? 1
- c. Write two preventive methods for PC intrusion. 2
- d. What is digital footprint? Why is it so important? 2
- e. How is pharming similar to and different from phishing? 2
- f. What measures (any four) should you take to keep data secure? 2
