Hind Junior College

Final Exam – **Ideal Solutions**

Computer Science (New) – (Code No. 083)
Class XI – [Year 2019-2020]

Maximum Marks: 70   **Total Time - 3 Hrs.**   **Date: 19 Feb 2020**

***Important** Instruction: All Questions are compulsory

Section A
(Unit 1 - Computer Systems and Organization) [10 Marks]

Q. No.	Question	Marks
1	What are the three types of Language Processor?	1
	Compiler, Interpreter and Assembler	
2	Arrange the following in ascending order: Tera byte, bit, MB, KB	1
	bit, KB, MB, Tera byte	
3	What is Unicode?	1
	Unicode is a character encoding system used by many popular languages like python and java.	
4	What is the difference between compiler and interpreter?	1
	<table><tr><th></th><th>Compiler</th><th>Interpreter</th></tr><tr><td>**Working**</td><td>A compiler translates the entire program into machine language code before the program can be executed.</td><td>Interpreters translate a program, a line at a time, as they are being run/executed.</td></tr><tr><td>**In case of errors**</td><td>It shows all the errors in the programs.</td><td>It halts on the first error.</td></tr><tr><td>**Executable Module**</td><td>It generates the executable module.</td><td>No executable code is ever produced.</td></tr><tr><td>**Languages using**</td><td>C, C++, etc</td><td>BASIC,Python, etc</td></tr></table> Only the first difference is required. Rest is optional.	
5	Which of the following are not input devices? (i) Keyboard (ii) Microphone (iii) Projector (iv) Headphones	1
	(iii) Projector (iv) Headphones	
6	Name any 2 temporary storage devices of the computer.	1
	Register, Cache, Main Memory (RAM) (Any 2)	
7	Convert the Following as Directed (i) $(534)_{10} = (?)_2$ (ii) $(101011)_2 = (?)_{10}$	2
	(i) $(534)_{10} = (10\ 0001\ 0110)_2$ (ii) $(101011)_2 = (43)_{10}$	
8	What is RAM and why is it used?	2

Pronounced as ramm, is the main memory of the system, used for temporarily holding the data, instruction and/or result, during program execution.

Section B
(Unit 2 - Computational Thinking and Programming - Python) [35 Marks]

Q. No.	Question	Marks
1	Which of the following is valid arithmetic operator in Python: (i) // (ii) ? (iii) < (iv) and	1
	(i) //	

2	What is the value of the expression 4+2**5//10
	   i) 1233
	   ii) 7
	   iii) 9
	   iv) 45
		1

	4+2**5//10 4+32//10 4+3 7	

3	Which is the correct form of declaration of dictionary?
	   (i) Day={1:'monday',2:'tuesday',3:'wednesday'}
	   (ii) Day=(1;'monday',2;'tuesday',3;'wednesday')
	   (iii) Day=[1:'monday',2:'tuesday',3:'wednesday']
	   (iv) Day={1'monday',2'tuesday',3'wednesday']
		1

	(i) Day={1:'monday', 2:'tuesday', 3:'wednesday'}	

4	Why does python report error for the following:
	`str1 = "Hello"`
	`str1[2] = 'p'`
		1

	String is of immutable type and thus we can't change/modify a String value	
5	Name the function that tells the data type of an object.	1
	type()	

6	Write the following expressions using operators used in Python:
	   i) $x = a^3 + b^3 + c^3$
	   ii) $A = \pi r(r+h)^2$
		2

	(i) x = a**3 + b**3 + c**3
	       x = math.pow(a,3) + math.pow(b,3) + math.pow(c,3)
	(ii) A = (22/7)*r*(r+h)**2
	       A = math.pi * r*(r+h)**2	

7	Identify the type of Token:	2

	i) D_o_j - Identifier
	   ii) True – Boolean Literal or Keyword
	   iii) * - Arithmetic Operator
	   iv) If - Keyword	

8	Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.	2
| | ```
To=30    #Lvalue cant be a literal
for A in range(0, To): #colon was missing
if A%4==0:        #if is a keyword and should be in small case, A not a
      print (A*4) #indentation
else:             #else is a keyword and should be in small case
``` | |

	`    print (A+3) #indentation`	
| **9** | Find and write the output of the following python code:<br><br>```python
for i in range(2):
    print(i)

for i in range(4,6):
    print(i)
``` | 2 |
| | 0

1

4

5 | |
| **10** | Find and write the output of the following python code:<br><br>```python
for x in range(10,20):
    if( x % 2==0):
        continue
print(x)
``` | 2 |
| | 19 | |
| **11** | Find and write the output of the following python code:<br><br>```python
s = 'school2@com'
k=len(s)
m=" "

for i in range(0,k):
    if(s[i].isupper()):
        m=m+s[i].lower()
    elif s[i].isalpha():
        m=m+s[i].upper()
    else:
        m=m+'bb'
print(m)
``` | 2 |
| | SCHOOLbbbbCOM

(Space is there in the beginning) | |
| **12** | Write a program to find **factorial** of any given number. Factorial of number 5 is 120 (factorial = 5x4x3x2x1). Consider the following example:
Input: 5
Output: 120 | 2 |
| | ```python
num = int(input("Enter a number: "))

#Way 1: Using for
factorial = 1

for i in range(1,num+1):
    factorial = factorial * i
print('Factorial', factorial)

#Way 2: Using While
factorial = 1

while(num>0):
    factorial = factorial * num
    num = num - 1

print('Factorial', factorial)
``` | |
| **13** | Write a program to count the number of words in a given String.
Input: Hello this is my world
Output: Number of Words = 5 | 2 |

```python
str = input('Enter some text: ')
wordCount = 0

#Way 1: Count the spaces in the sentence
'''
The number of words in a sentence are equal to the
number of spaces in the sentence plus 1
'''
if len(str) > 0:
    wordCount = 1

for c in str:
    if c == ' ':
        wordCount+=1

#Way 2 - Using count method
wordCount = str.count(' ') + 1

print('Number of Words ', wordCount)
```

14	Write a program to find number of digits of a given integer (positive or negative). **Input:** -12389 **Output:** No. of digits = 5	2

```python
nod = 0 #nod - number of digits
num = int(input('Enter a number to count its digits: '))

#if the number is negative then make it positive
if(num<0):
    num = num * -1

while(num>0):
    num = num//10
    nod+=1

print('Number of digits = ', nod)
```

15	Write a program in python to print Month name for the given month number. Input: Enter month number: 5 Output: It's May	4

```python
monthNo = int(input('Enter Month No.: '))
monthName =''

if monthNo == 1:
    monthName = 'January'
elif monthNo == 2:
    monthName = 'February'
elif monthNo == 3:
    monthName = 'March'
elif monthNo == 4:
    monthName = 'April'
elif monthNo == 5:
    monthName = 'May'
elif monthNo == 6:
    monthName = 'June'
elif monthNo == 7:
    monthName = 'July'
elif monthNo == 8:
    monthName = 'August'
elif monthNo == 9:
    monthName = 'September'
elif monthNo == 10:
    monthName = 'October'
elif monthNo == 11:
    monthName = 'November'
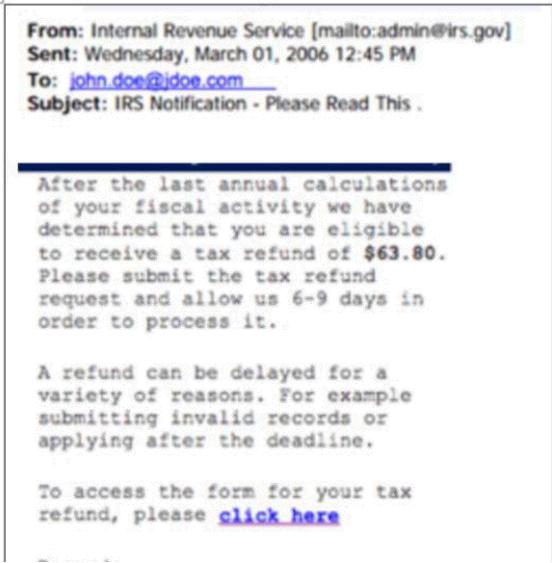elif monthNo == 12:
    monthName = 'December'
```

| | ```python
else:
    monthName = 'Invalid Month Number'

print('It\'s ', monthName)
``` | |
| 16 | What is sorting? Write a program in python to bubble sort an integer List. | 4 |
| | **Sorting Definition**: Data sorting is any process that involves arranging the data into some meaningful order to make it easier to understand, analyze or visualize.<br><br>```python
List = [90,8,3,4,45,3,2,89]
noe = len(List) #noe - number of elements
temp = 0

print('Before Sorting: ', List)

for i in range(1,noe):
    for j in range(0,noe-i):
        if List[j] > List[j+1]:
            temp = List[j]
            List[j] = List[j+1]
            List[j+1] = temp

print('After Sorting: ', List)
``` | |
| 17 | Write a program in python to print the following pattern from a given String:
Input: CBSE
Output:
C
BB
SSS
EEEE | 4 |
| | ```python
str = input('Enter a String: ')
strLen = len(str)

for i in range(0,strLen):
    #print ith character i times
    for j in range(0,i+1):
        print(str[i],end = '')
    print() #Line Change
``` | |

Section C
(Unit 3 - Data Management) [15 Marks]

Q. No.	Question	Marks
1	Which key word is used to sort the records of a table in descending order?	1
	DESC	
2	Which command is used to modify the records of the table?	1
	UPDATE	
3	Name any 2 DDL commands.	1
	CREATE TABLE command ALTER TABLE command DROP TABLE command	
4	Which clause is used to remove the duplicating rows of the table?	1
	DISTINCT	
5	Write the full form of the following:	1
	(i) SQL – Structured Query Language (ii) DML – Data Manipulation Language	
6	Write the SQL command to delete a table named – "product".	1
	DROP TABLE product;	
7	Differentiate between Primary key and Candidate key.	2

Primary Key	Candidate Key
A primary key is a set of one or more attributes that can uniquely identify tuples within a table.	All attribute combinations inside a relation that can serve as primary key are Candidate Keys.
There can only be one primary key in the table.	There can be more than one candidate key in a table.

8 Write an output for SQL queries (i) to (iii), which are based on the table: STUDENT   3

RollNo	Name	Class	DOB	Gender	City	Marks
1	Nanda	X	06-06-1995	M	Agra	551
2	Saurabh	XII	07-05-1993	M	Mumbai	462
3	Sanal	XI	06-05-1994	F	Delhi	400
4	Trisla	XII	08-08-1995	F	Mumbai	450
5	Store	XII	08-10-1995	M	Delhi	369
6	Marisla	XI	12-12-1994	F	Dubai	250
7	Neha	X	08-12-1995	F	Moscow	377
8	Nishant	X	12-06-1995	M	Moscow	489

(i)   SELECT COUNT(*) FROM STUDENT;

count(*)
8

(ii)   SELECT DISTINCT city FROM STUDENT;

City
Agra
Mumbai
Delhi
Dubai
Moscow

(iii)   SELECT NAME, GENDER FROM STUDENT WHERE CITY="Delhi";

Name	Gender
Sanal	F
Store	M

9 Write SQL queries for (i) to (iv), which are based on the table: STUDENT given in the question 8:   4

(i)   To display the records from table student in alphabetical order as per the name of the student.
```
SELECT * from student
ORDER BY name;
```
(ii)   To display Class, Dob and City whose marks is between 450 and 551.
```
SELECT class, dob, city
FROM student
WHERE marks BETWEEN 450 AND 551;
```
(iii)   To display Name and Class of students whose name's second letter is 'a'.
(Nanda, Saurabh, Sanal, Marisla)
```
SELECT name, class
FROM student
WHERE name LIKE '_a%';
```
(iv)   To increase marks of all students by 20 whose class is "XII"
```
UPDATE student
SET marks = marks + 20
WHERE class='XII';
```

Section D
(Unit 4 - Society, Law and Ethics) [10 Marks]

Q. No.	Question	Marks
1	Name any 2 social networking apps.	1
	Facebook, Whatsapp, Twitter, Instagram, Snapchat, LinkedIn, etc (Any 2 from these)	
2	From: Internal Revenue Service [mailto:admin@irs.gov] Sent: Wednesday, March 01, 2006 12:45 PM To: john.doe@jdoe.com Subject: IRS Notification - Please Read This . After the last annual calculations of your fiscal activity we have determined that you are eligible to receive a tax refund of **$63.80**. Please submit the tax refund request and allow us 6-9 days in order to process it. A refund can be delayed for a variety of reasons. For example submitting invalid records or applying after the deadline. To access the form for your tax refund, please **click here** Ravi received a mail form IRS department (as shown above). On clicking " Click-Here", he was taken to a site designed to imitate an official-looking website, such as IRS.gov. He uploaded some important information on it. Identify and explain the cybercrime being discussed in the above scenario.	1
	Phishing	
3	A computer program encrypts (lock by password) all your important documents on the computer and asks to deposit money in ceratin bank account to decrypt (un-lock) those files. What that malicious program is known as?	1
	Ransomware	
4	What do you mean by a spyware?	1
	Spyware is a type of malicious software (malware), that is installed on a computing device without the end user's knowledge. It invades the device, steals sensitive information (like username, password, photos, device camera), and transfers it to the creator.	
5	What do you mean by a Trojan?	1
	A Trojan horse, or Trojan, is a type of malicious code or software that looks legitimate but can cause damage to computer by deleting files, steal sensitive information or perform any other kind of malicious action.	
6	What is Phishing?	1
	Phishing is a type of social engineering attack often used to steal user data, including login credentials and credit card numbers. It occurs when an attacker, masquerading as a trusted entity, dupes a victim into opening an email, instant message, or text message.	
7	How can we protect our computer from cyber threats? (give only 2 points)	1
	Use Anti-Virus Software Use Firewall Use Strong Password	

8	How can we hide our identity on the internet? (give only 2 points)	1
	Use Virtual Private Network (VPN) Use Proxy (Torr Browser has proxy integrated in it) Use Incongnito Browsing	
9	What is cyber Bullying? Give an example to explain it. (In short)	2
	Harassing, demeaning, embarassing, defaming or intimidating someone using modern technologies like social networking sites, internet, cell phones, etc. is called cyber bullying. Harish and Ravi had a fight. After fight, Ravi started posting negative comments about Harish on the facebook. This incident can be considered as cyber bullying.	