

Unique Paper Code : 32345302
Name of the Course : B.Sc. (H) - Generic Elective (GE)
Name of the Paper : Computer Networks
Semester : III
Year of Admission : 2019 Onwards

Duration: 3 Hours

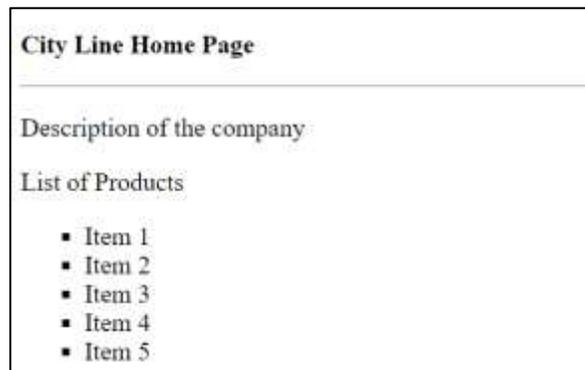
Maximum Marks: 75

Attempt any **four** questions.
All questions carry equal marks.

- Q.1. List any two major responsibilities of each layer in the OSI Reference Model. Differentiate between TCP and UDP Services?
List the semantic elements in HTML. Write HTML code to create the following webpage.



- Q.2. Briefly describe Data Communication System? Explain various components of a data communication system with the help of a neat labelled diagram.
Write HTML code to create the following webpage. List the purpose of each element/tag used.

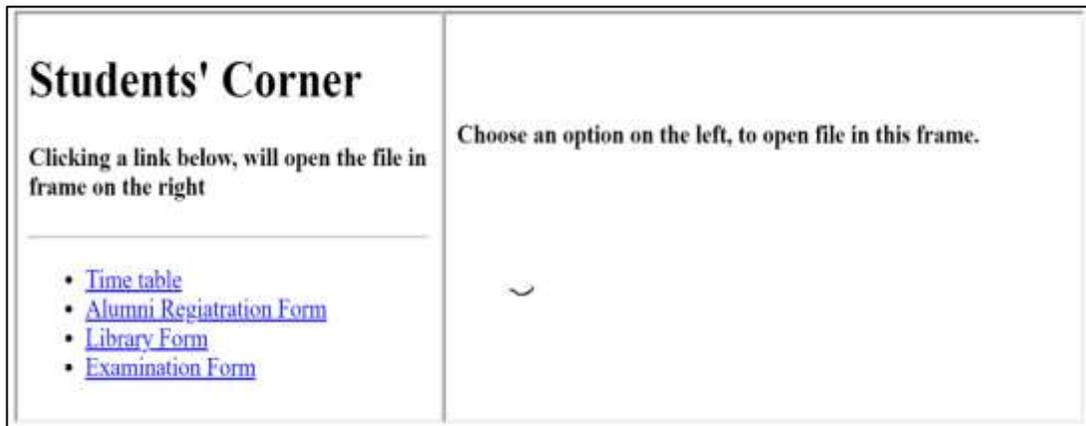


Q.3. Write a short note on Transmission Media. Explain the Guided and Unguided types of Transmission Media with the help of a labelled diagram.

What are the different ways to include CSS code in an HTML webpage? Explain with the help of examples. How do you validate CSS code?

Q.4. What is FTP? Briefly explain the working of Control connection and Data Connection under FTP.

Compare and contrast the Client-Server model over the Peer-to-Peer model. Create an HTML document having two frames in the following format.



Q.5. Provide the name of one connecting device used at each the Physical layer, Data Link Layer, Network Layer, Transport Layer and Application Layer of ISO-OSI reference model and give a brief description of the functionalities of these devices.

Write HTML code to create the following webpage.



Q.6. What are the different ways of adding Links to a webpage? Write HTML code that includes each type of link in the webpage.

Write short notes on:

- Infrared communication
- Line-in-Sight propagation
- URL
- HTTP
- Search Engines

Unique Paper Code : 62343503
Name of the Course : B.A. (Programme) (CBCS-LOCF)
Name of the Paper : Desktop Publishing (SEC)
Semester : V
Year of Admission : 2019

Duration: 3 Hours

Maximum Marks: 75

Attempt any **four** Questions.
All questions carry equal marks.

- Q. 1 List and explain various components of a desktop publishing (DTP) system. Name and explain at least two different desktop publishing software with their utilities. Can a word processor like Microsoft word be used for desktop publishing? If yes, then explain its use and benefits / limitations in desktop publishing.
- Q. 2 Describe the importance of using columns in Scribus. Explain the steps to create multiple columns in a Scribus document. Also, list out the steps for separating the columns, applying text distances, and applying styles to the column text.
- Q. 3 Explain the following, in relation to Image layout in Scribus, and their uses– Transform, Crop, Moving nodes, and Applying shadows. Also provide one scenario for each of these tools where you will be using these tools.
- Q. 4 List out and discuss the advantages of a Desktop Publishing system. In your academic journey so far, where do you think, you could have used your DTP skills? Explain a scenario and steps required in Scribus to achieve the same. E.g., you can use Scribus to design a project, marriage card invitation or a college festival poster.
- Q. 5 Explain the importance of designing the Master page of a project in Scribus. What precautions should we take while designing the left and right pages? Explain with a scenario (Book/Magazine), the selected features by you in a Master page, and their justification.
- Q. 6 Explain in detail complete process of designing a coloured resume, in Scribus, with your photo on top right followed by text in a 2-column format below it. On the left column, you will have contact information such as telephone, email, etc., whereas the right side will have your educational qualifications and relevant experience. The names of references should be at the bottom of the resume outside the text boxes. List out the steps to make it a colourful resume using Scribus using at least five different features.

Unique Paper Code : 62345501
Name of the Course : B.A. (Prog.) GE (CBCS)
Name of the Paper : IT Fundamentals
Semester : V
Year of Admission : 2019

Duration: 3 Hours

Maximum Marks: 75

All questions carry equal marks.
Attempt any Four Questions.

- Differentiate between data integrity and data inconsistency with respect to database.
 - Define the structure of number system and convert the following numbers from Binary to Decimal representation:
10011000
1000.1111
10000.011
 - Convert the following numbers from Decimal to Binary representation.
1456
14.56
199
- Which one is the fastest memory among register and cache memory? Justify your answer. Explain various types of registers and cache memory. What is the use of BIOS in computer system?
- What are system and application softwares? What are the services provided by the Operating System? What is the significance of device drivers?
- Describe the various components of Database system. Describe entities, attributes and relationships, with suitable examples. Elaborate the following formulas based on table given below:

	A	B	C	D
1	NAME	QUIZ1	QUIZ2	QUIZ3
2	ANDY	95		99
3	BOB	80	78	75
4	BETTY	78	89	67
5	FRANK		90	92
6	FRED	65		98
7	JAMES	56	91	
8	LISA	98	92	65

COUNTIF (B2:D8,">78")
AVERAGEA (C2:C8)
MAXA (B2:C8)
SUMIF(B2:D8,"<90")

5. Differentiate between LAN, WAN and MAN. What are the various categories of wireless networking devices? Explain the architecture of Internet and IP addresses.
6. Draw a block diagram to illustrate the basic organization of computer system and explain the functions of its various units. Explain various pick and pointing input devices. List any two devices which act as input as well as output devices.

Unique Paper Code : 62343320
Name of the Course : B.A. (Prog.) Computer Applications: SEC
Name of the Paper : Word Processing and Presentation Software
Semester : III
Duration : 2 Hours
Maximum Marks : 75
Year of Admission : 2019 and 2020

Instructions for Candidates:

Answer any four questions. All questions carry equal marks.

Q1. Suppose you have to create report on the topic “Online Teaching” in LibreOffice Writer which has predefined settings. Which method will you prefer for creating such a document and write steps to create such a document? After you have created this document and added relevant text in it, you need to send the same document to Alice and Bob. How can you ensure that Alice can only read the document and cannot make any changes in it while Bob can read and edit the document? Write steps to do the same.

Q2. Identify the text formats applied to the characters in the following text in LibreOffice Writer:

- i) **Word**
- ii) *Processing*
- iii) ~~and~~
- iv) Presentation
- v) Software
- vi) X²
- vii) A₁
- viii) EXAMINATION

Consider the following image and text in which the image is anchored to paragraph:



LibreOffice is a feature-rich, free, and open-source office suite. It includes several powerful applications for word processing, spreadsheets, presentations, graphics, databases, and formula editing. Writer is the word-processing application. It is compatible with a wide range of document formats including Microsoft Word (.doc, .docx), and you can export your work in several formats including PDF.

The above text and image have the “None” setting applied for wrapping text around the image. Show how the above text and image will be shown after applying the following wrap settings in LibreOffice Writer:

- i) Parallel
- ii) Optimal
- iii) Before
- iv) After
- v) Through

Q3. Write steps to create a presentation of 5 slides in LibreOffice Impress as per the given settings:

- i) Slide 1 is the title slide.
- ii) Slide 2 contains a title, an image, and a bar chart.
- iii) Slide 3 contains a title and a table with 5 columns and 10 rows.
- iv) Slide 4 contains a title and 6 images.
- v) Slide 5 is a title only slide.

Write steps to create the following 2 custom slide shows of this 5 slide presentation:

- i) “Odd Slide Show” with slide 1,3, and 5
- ii) “Even Slide Show” with slide 2 and 4.

Q4. ABCD college is issuing certificates to 5 students who secured first, second and third positions in the college in the three courses- B.A(P), B.Sc(H), and B.Com(H). The data record (Student.xls) has the following fields: Name, Roll No, Course, and Position. Write steps to register the data source and issue the **individual** certificates using mail merge. The format of the letter is as follows:

ABCD College

Date: 21/11/2021

This is to certify that Mr./Ms. <Name> <Roll No> <Course> has secured <Position> in ABCD College.

Principal

ABCD College

Q5. The marketing department of a company is preparing a 5-slide presentation for 4 newly launched products. Write steps to create the presentation with the first slide as title slide. Rest of the slides contain the images and details of the 4 new products launched respectively. Write steps to insert the “Wipe” transition and apply the same to all the slides and also add an animation (duration - 4 seconds) on the title of the presentation. Write the steps to play the slide

show in a loop and automatically advance the slide number 1, 2, and 3 after 2 seconds and slide number 4 and 5 after 3 seconds.

Q6. Write steps to create a table in the following format using LibreOffice Writer.

Time Table						
Day Time	8:30-9:30 am	9:30-10:30 am		10:30-11:30 am	12:30 -1:30 pm	1:30-2:30 pm
Monday	Mathematics		English		Chemistry	
Tuesday	English	Physics				
Wednesday		Hindi A	Hindi B			
Thursday	Chemistry		Physics			
Friday	Hindi A	Hindi B		Mathematics		

Further, write steps to perform the following after creating the table

- Add a row for Saturday at the bottom of the table for Saturday
- Convert the above table to text

Unique Paper Code : 62344330
Name of the Course : B.A. (Prog.)
Name of the Paper : Computer Networks and HTML
Semester : III
Year of Admission : 2019 and onwards

Duration: 3 Hours

Maximum Marks: 75

Attempt any four questions
All questions carry equal marks.

Q1. If five devices are arranged in a network, discuss the consequences in each case if a connection fails in star, bus, mesh and ring topology.

If there are 10 devices connected in a topology then how many ports and links required in mesh topology?

What are the criteria necessary for an effective and efficient network?

We have two computers connected by an Ethernet hub at home. Is this a LAN or a WAN? Explain the reason.

Q2. Write an HTML program to design the frameset given below.

Frame1	Frame2	
	Frame3	
	Frame4	Frame5

Describe any two types of unguided media on the basis of propagation methods, range and their applications. What is crosstalk? How is it minimized in case of twisted-pair cable?

Q3. Write HTML code snippets to display the following on a webpage:-

H₂O

Principal says, " Please be in Discipline"

~~This is not a valid Example.~~

$(\text{Diagonal})^2 = (\text{Length})^2 + (\text{Width})^2$

A table with 2 rows and 2 columns

What is a footprint of a satellite? Where does signal power is maximum and minimum in footprint? What are the advantages of a multipoint network connection over a point-to-point connection?

- Q4. What is the position of the transmission media in the Open Systems Interconnection Model (OSI) model that describes the functions of a networking system? Is there any alternative model to the OSI model? If yes, define all the layers responsibilities with a clear diagram. Differentiate between these two models.
- Q5. Provide the layers at which repeaters, hubs, bridges, switches, routers, and gateways operate and give a brief description of their functionalities.

Write an HTML program to design the form given below: -

LOGIN FORM

USERNAME:

PASSWORD:

- Q6. Explain the classful addressing scheme related to IPv4 addresses. Which class is used for multicast addresses?

Find the class of the following IP addresses:-

69.89.31.226

172.16.254.1

192.168.1.1

261.58.216.164

Write the network commands for the following operations: -

To test the connectivity between two hosts;

To show several details about the path that a packet takes from the source computer to destination computer.

Write an HTML program to display an ordered grocery list.

Unique Paper Code	: 62347502
Name of the Course	: B.A. Programme (Computer Applications)
Name of the Paper	: Programming in Java
Semester	: V
Duration	: 3 Hours
Maximum Marks	: 75
Year of Admission	: 2019 onwards

Instructions for Candidates

All questions carry equal marks. Attempt any **FOUR** questions.

- Q. 1) a) Java is a platform independent programming language. Explain in your own words.
- b) Consider the following data of a student: *Name, Age, Gender, Class, Section, Father's Name, Mother's Name, Address, Mobile* and *Marks*. Suggest a suitable datatype in Java for each of the given data.
- c) Write a method in Java that initializes the given data by taking input from the user.
- Q. 2) a) Explain any three types of literals in Java with the help of examples.
- b) Differentiate between Type Conversion and Type Promotion in Java with the help of examples.
- c) A set of statements has to be repeated N times in Java. Which looping structure has to be used? Give reasons for choosing the looping structure.
- d) Consider the following code in Java:

```
if (age < 13) {
    System.out.println("Person is Child");
}
else if (age < 19) {
    System.out.println("Person is Teenager");
}
else if (age < 45) {
```

```

        System.out.println("Person is Adult");
    }
    else if (age < 60) {
        System.out.println("Person is Middle-aged");
    }
    else {
        System.out.println("Person is Senior Citizen");
    }
}

```

What will be the output of the above given code if age is 45? Rewrite the above sequence using Switch-Case in Java.

e) Write a method in Java to check whether a number is positive or negative. Provide the user input.

Q. 3) a) Consider a two dimensional array in java. The integer array is of 5 by 6 size. Write code in Java to initialize the array using loop, with each element containing the remainder of the division of product of its indexes by 4.

b) Explain with the help of examples to differentiate between “<<” and “<<<” operators.

c) How many types of relational operators are there in Java? Write a code in Java to illustrate the use of each of them.

d) Consider the following code in Java:

```

int i = 0;
void try(){
    int j = 1;
    System.out.println(i);
}

```

What will be output of the above given code? What is the scope of the variables in above given code? Suppose statement “int j = 1;” is replaced with “int i = 1;”. What will be the output after the replacement of the statement? Justify your answer.

Q. 4) a) Consider the following data members: *Name, Age, Gender, Address, Mobile Number, Position, Department* and *Salary*. Define a class *Employee* in Java for this

data. The class should contain a method for inputting the values for all the data members from the user. The class should also contain a method to display them.

b) Explain which concept of OOP is applied here.

c) Describe how Garbage collection works in Java with the help of above mentioned class.

Q. 5) a) Create a superclass named *Shape* which consists of a Empty Constructor. This class is inherited by a subclass *Quadrilateral* which consists of a constructor and an abstract method *Perimeter*. Further, *Quadrilateral* subclass is inherited by three subclasses namely, *Rectangle*, *Square* and *Circle*. Write the code in Java to implement these five classes.

b) Suppose class *Square* also wants to inherit from the class *Shape*. Can *Square* class inherit from both *Quadrilateral* and *Square* classes? Give reasons.

c) How can we ensure that our class cannot be inherited? Explain with the help of examples.

Q. 6) a) Consider a method *Compute* in Java. It has two inputs, x and y . The method *Compute* checks whether the number x is prime or not. In case it is prime, the method prints the sum of first y natural numbers. However, in case, x is not prime, the method prints the first y Fibonacci numbers. Implement the method *Compute* in Java.

b) Write logical expressions to represent each of the following conditions:

Marks scored are greater than 300 but less than 500

The *category* is either 'A' or 'D'

The *experience* is less than 4

Value is between 2000 and 2500.

Unique Paper Code **62347503**
Name of Course **B.A. Programme**
Name of Paper **Programming with Python (LOCF)**
Semester **V**
Year of Admission: **2019**

Duration: **3 hours**

Maximum Marks: **75**

Attempt any **four** questions.
All questions carry equal marks.

1. Write a Python program to calculate and print roots root1 and root2 as defined in the formula below. The user has to provide a, b & c as input.

$$root1 = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$
$$root2 = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

Construct logical expressions for representing the following conditions:

- Percentage should be greater than 60 and less than 75
- Gender is female and Age is less than 30
- Length of string str1 is greater than 4

Write a nested if statement in Python to calculate the Commission depending on Sales as given below:

```
Sales >= 1000 then Commission=20% of Sales  
Sales < 1000 and >= 700 then Commission = 15% of Sales  
Sales < 700 and >=500 then Commission = 10% of Sales  
Sales < 500 and >= 200 then Commission = 5% of Sales  
Sales < 200 then Commission = 2% of Sales
```

2. Differentiate between `__init__` method and any other user defined class method.

When a=18 and c=20, derive and discuss the result of a | c.

Define a class Student, which has Rollno, marks1, marks2 and marks3 as the data members. Describe the following methods:

- Constructor to initialize the data members
- Average () method to return the average marks
- Percentage () method to return the percentage of marks, considering 300 as maximum marks

Create an object `stud1` of class `Student` with values “Hitesh”, 89, 75, 80.
Calculate the average and percentage of `stud1` and print them.

3. Write a Python program to calculate the sum of n terms of the following series, where n is taken as input from the user.

$$1/3 + 1/3^2 + 1/3^3 + 1/3^4 + 1/3^5 + \dots$$

Write a Python program which prints the prime numbers present in a list `List1` of integers:

```
List1 = [13, 34, 55, 67, 21, 3, 89, 200, 51]
```

Solve the following and write the step by step execution:

```
for i in range(1, 10, 1):
    for j in range(i, 20, i):
        if (i+j < 10):
            print (i+j)
        else:
            break
```

4. Write a Python function that takes a string as a parameter and returns a string with every successive repetitive character replaced with an asterick (*).
For example: ‘balloonl’ is returned as ‘bal*o*n*’.

Given a list `L1=[20, 10, 80, 40, 90, 60, 70]`. Write one line Python commands for the following:

- Sort the list `L1` in descending order
- Remove element ‘90’ from `L1`
- Add the elements [“a”, “b”] at the end of `L1`
- Add element ‘30’ at index 3 in `L1`

Write a program to create a dictionary named `password_lookup` that contains username as keys and password as the values, both username and password are of string type. The username and password will be entered by the user one by one, until user enters “exit” for the username.

5. Consider the two sets given below:

```
Set1={"Oreo", "Kit Kat", "Perk", "Kinder_Joy", "Snickers"}
Set2={"Dark_Fantasy", "HidenSeek", "Bourborn", "Perk",
"ParleG"}
```

Write Python commands to perform the following:

- Combine the elements of `Set1` and `Set2`
- Find common elements of `Set1` and `Set2`
- Find those elements which are present in `Set2`, but not in `Set1`
- Add “Maska_Chaska” to `Set2`

- Find elements which are present either in Set1 or Set2

Given the recursive function below:

```
def sum(n):  
    if (n==1):  
        return(1)  
    else:  
        return(n + sum(n-1))
```

Explain the step-by-step execution of the function call `sum(5)`. What will be the output of `sum(5)`?

Write a Python program to print the numbers between 100 and 200 where the middle digit is an even number.

6. Which is most appropriate data structure (lists, sets, tuples, strings, dictionary) for storing the following data:
- Collection of names (names can be repeated)
 - Collection of mail ids
 - Collection of pairs Student and Department
 - Collection of 10 characters

Write a function `maximum(a, b)` to calculate largest of the two numbers. Use this function to find largest of three numbers.

Write a Python program to create a dictionary `Result` having data of 5 students in the form of key: value pairs as `Student_name: marks`, where `marks` is a list of marks obtained in 5 subjects. Print student name, marks in all subjects and sum of marks. Also, create another dictionary having key: value pairs as `Student_name: Sum_of_marks`, where `Sum_of_marks` is sum of marks of the `Student_name` corresponding to `Result` dictionary and display this dictionary.