

Total No. of Questions : 7]

SEAT No. :

PC-4002

[Total No. of Pages : 3

[6348] - 101

M.Sc.

COMPUTER APPLICATION

CA-CCTP-1: Web Technology

(2019 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Question 1 is compulsory.
- 2) Solve any five questions from question 2 to 7.
- 3) Questions 2 to 7 carry equal marks.

Q1) Attempt any FIVE of the following :

[10]

- a) Mention any two characteristics of PHP.
- b) Define DOM in Javascript
- c) What are the types of websites?
- d) List any two benefits of using PHP framework.
- e) What is the use of <div> and tag in HTML?
- f) What is the syntax of variable function in PHP?

Q2) Attempt the following :

- a) i) Compare between indexed array and Associative arrays in PHP.[4]
- ii) How can you insert inline style sheet in the HTML document? Explain with example. [3]
- b) Explain the concept of Traversing array in PHP [5]

P.T.O.

Q3) Attempt the following :

- a) i) Define event handling in Java Script Demonstrate with one example. [4]
- ii) What is Framework? Give details of any two PHP frameworks. [3]
- b) Write a PHP program to check student grade based on marks & following conditions. [5]
- Marks are 60% and more, grade = First Division
 - Marks between 45% to 59%, grade = Second Division
 - Marks between 33% to 44%, grade = Third Division
 - Marks are less than 33% , Fail

Q4) Attempt the following :

- a) i) Discuss the structure of HTML document with its syntax and one example. [4]
- ii) What do you understand by 'Pass parameter by value' and 'Pass parameter by reference'. in PHP? [3]
- b) Write a javascript to check if a given number is even or not. [5]

Q5) Attempt the following :

- a) i) Define DTD and Schema. Compare between XML Schema and DTD. [4]
- ii) List any three benefits of using cascading style sheet. [3]
- b) Write a PHP script that inserts a new item '#' in an array at 3rd position.
If original array : 11 22 33 44 55
After insertion, 11 22 33 # 44 55. [5]

Q6) Attempt the following :

- a) i) Write a PHP Script to display the elements along with the key for an associative array [4]
- ii) What are the three main components of HTTP response? [3]
- b) Write the HTML code for Travel Reservation form which has following details to fill
- Full name
 - Email address
 - Tour package list
 - Date
 - No of person
 - Terms (agree/disagree)

With submit button. [5]

Q7) Attempt any TWO of the following :

- a) Explain the following PHP control structures with syntax & one example. [6]
- i) While statement
- ii) Foreach construct
- iii) Break statement
- b) Define list in HTML. Explain different types of list in HTML with example. [6]
- c) Write a note on Functions in Javascript [6]



Total No. of Questions : 7]

SEAT No. :

PC4003

[Total No. of Pages : 2

[6348]-102

**First Year M.Sc. (Computer Application)
CA-CCTP-2 : ADVANCED DATABASES
(2019 Pattern) (Semester - I)**

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Question No.1 is Compulsory.*
- 2) *Solve any five questions from Q.No.2 to Q.No.7.*
- 3) *Draw neat diagrams wherever necessary.*

Q1) Solve any five from the following.

[5×2=10]

- a) Define cursor? Enlist its types.
- b) Differentiate between volatile & Non-volatile storage.
- c) What is recoverable schedule? Give Example.
- d) What is difference between 3NF and BCNF?
- e) Define Lock.
- f) What are the types of failure?

Q2) Answer the following.

- a) Explain the types of Distributed Databases with its advantages. **[7]**
- b) What is function in PL/PGSQL? Explain with example. **[5]**

Q3) Answer the following.

- a) What is DTD in XML? Explain. **[7]**
- b) What is schedule? Explain types of schedule. **[5]**

P.T.O.

Q4) Answer the following.

- a) Describe Architecture of parallel Database with its advantages & disadvantages. [7]
- b) What is transaction? Explain states of Transaction. [5]

Q5) Answer the following.

- a) Explain Discretionary Access control with example. [7]
- b) What are the armstrong axioms for closure set of functional dependencies? if relation schema [5]

$R = \{A, B, C, G, H, I\}$ and set of FDs is

$F = \{A \rightarrow B,$

$A \rightarrow C, CG \rightarrow H, CG \rightarrow I, B \rightarrow H\}$ find F^+ .

Q6) Answer the following.

- a) What are the steps in query processing? Explain. [7]
- b) Explain two-phase locking protocol with example. [5]

Q7) Write short note on: (Any Two) [2×6=12]

- a) Deferred Database modification Technique.
- b) Multiple Granularity.
- c) Pipelining in databases.

* * *

Total No. of Questions : 7]

SEAT No. :

PC4004

[6348]-103

[Total No. of Pages : 3

First Year M.Sc. (Computer Application)
CA-CCTP-3 : DESIGN & ANALYSIS OF ALGORITHMS
(2019 Pattern) (Semester-I)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Question 1 is compulsory.*
- 2) Solve any five questions from question 2 to question 7.*
- 3) Question 2 to question 7 carry equal marks.*
- 4) Figures to the right indicate full marks.*

Q1) Solve any five of the following.

[10]

- a) State relationship between P and NP.
- b) What is Hamilton cycle?
- c) Write algorithm to for swapping of 2 numbers.
- d) Define LIFO, FIFO and LCBB.
- e) Define:
 - i) Time complexity
 - ii) Space complexity
- f) What is use of Bellman Ford Algorithm?

Q2) Attempt the following:

[12]

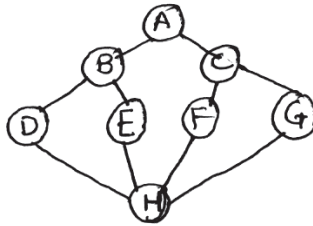
- a) Write algorithm for heap sort, also apply it on 9, 8, 7, 6, 5, 4, 3, 2. **[7]**
- b) Write algorithm for binary search. Also find its time complexity. **[5]**

P.T.O.

Q3) Attempt the following:

[12]

- a) What is difference between BFS & DFS also find BFS & DFS for following graph. [7]



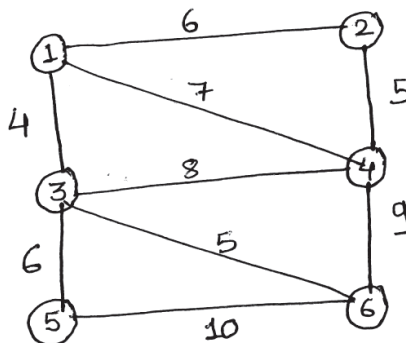
- b) What is divide & conquer strategy? Apply Strassen's matrix multiplication to find product of following matrices. [5]

$$A = \begin{bmatrix} 12 & 34 \\ 22 & 10 \end{bmatrix} \quad B = \begin{bmatrix} 3 & 4 \\ 2 & 1 \end{bmatrix}$$

Q4) Attempt the following:

[12]

- a) Explain quick sort and apply quick sort on [7]
55, 7, 48, 32, 18, 23, 82, 62.
- b) Find minimum cost spanning tree for the following graph using Prim's algorithm. [5]



Q5) Attempt the following:

[12]

- a) Explain matrix chain multiplication problem and using it multiply matrices in chain 10×5 , 5×10 , 10×20 , 20×5 using dynamic programming. [7]
- b) Solve the following 0/1 knapsack instance by LCBB [5]

Where $n = 4$

$m = 15$

$p = (p_1, p_2, p_3, p_4) = (10, 10, 12, 18)$

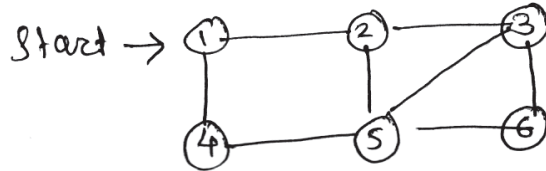
$w = (w_1, w_2, w_3, w_4) = (2, 4, 6, 9)$

Q6) Attempt the following: [12]

- a) Draw state space tree for sum of subset problem using FTS & VTS both. [7]

$$n = 5 \quad m = 30 \quad w = \{5, 7, 10, 13, 15\}$$

- b) Find out all possible Hamiltonian cycles for the following graph. [5]



Q7) Attempt any two of the following. [12]

- a) Obtain reduced cost matrix for TSP using LCBB

$$\begin{bmatrix} \infty & 7 & 3 & 4 \\ 4 & \infty & 4 & 8 \\ 10 & 5 & \infty & 5 \\ 9 & 5 & 5 & \infty \end{bmatrix}$$

- b) Explain Cook's theorem and its significance.
- c) Consider the following instance for job sequencing with deadlines problem where $n = 7$

$$(p_1, p_2, p_3, p_4, p_5, p_6, p_7) = (6, 13, 20, 15, 6, 8, 33)$$

$$(d_1, d_2, d_3, d_4, d_5, d_6, d_7) = (2, 1, 4, 3, 2, 1, 2)$$

Give solution using greedy method that uses set representation.



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SEAT No. :

PC4005

[6348]-104

[Total No. of Pages : 3

First Year M.Sc. (Computer Application)

**CA-CBOTP-1A : OBJECT ORIENTED PROGRAMMING WITH C++
(2019 Pattern) (Semester - I)**

Time : 2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) *Question 1 is compulsory.*
- 2) *Solve any three questions from Q.2 to Q.5.*
- 3) *Questions 2 to 5 carry equal marks.*

Q1) Attempt any five of the following : **[5]**

- a) By default, members of class in C++ are public. State true or false.
- b) What is a friend function?
- c) What is the concept of overriding member function?
- d) Enlist various File operations.
- e) Which are the various file mode options are available in CPP?
- f) The compiler reports an error if overloaded + operator performs – (subtraction) operation. State true or false.

Q2) Attempt the following :

- a) Write an inline function for finding minimum of two numbers. **[2]**
- b) Explain the rules of overloading an operator. **[4]**
- c) Explain the pure virtual function with example. **[4]**

P.T.O.

Q3) Attempt the following :

- a) Differentiate between public and private inheritance with two points. [2]
- b) Explain any four differences between constructor and destructor. [4]
- c) How to define class members and member functions? Explain with example. [4]

Q4) Attempt the following :

- a) What is the application of scope resolution operator :: in C++? [2]
- b) Write a C++ program to display *n* number of employees with information such as Employee number, employee name and employee salary. [4]
- c) Trace the output of the following : [4]

```
Void func (int x)
{
    try {
        if(x == 1) throw x ;
        else
            if(x == 0) throw 'x' ;
        else
            if(x == -1) throw 1.5 ;
        cout << "try ends in" ;
    }
    catch(char ch)
    {   cout << "caught character" << ch ;}
    catch(int i)
    {   cout << "caught integer"<< i ;}
    catch(double d)
    {   cout << "caught Double"<< d ;}
        cout <<"End of Catch block" ;
    int main( )
    {
        func(1);
        func(0)
        func(-1)
        func(2);
        return 0 ;
    }
```

Q5) Attempt any two of the following :

- a) Describe the structure of C++ program diagrammatically. [5]
- b) Describe the following terms : [5]
 - i) Multiple inheritance
 - ii) Base class and derived class
- c) What is function overloading? Write the overloaded function for computing area of circle, rectangle and triangle. [5]

x x x

Total No. of Questions : 5]

SEAT No. :

PC4006

[6348]-105

[Total No. of Pages : 2

First Year M.Sc. (Computer Applications)

CA-CBOTP-1B : ASP.NET

(2019 Pattern) (Semester - I)

Time : 2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) Question 1 is compulsory.***
- 2) Solve any three questions from Q.2 to Q.5.***
- 3) Questions 2 to 5 carry equal marks.***

Q1) Solve any five of the following :

[5]

- a) What is the file extension for Web Service?
- b) Which protocol is used to call Web Service?
- c) What is cookie?
- d) What is built in object in ASP.NET?
- e) What is parent class of all Web Service Control?
- f) Define types of configuration files.

Q2) Attempt the following :

[10]

- a)
 - i) What is difference between trace & debug? **[2]**
 - ii) What is the usage of IIS. **[4]**
- b) Write the C# program to check entered number is palindrome or not.**[4]**

P.T.O.

Q3) Attempt the following : **[10]**

- a) i) What is the correct of post back in ASP.NET. **[2]**
- ii) What are the advantages of ASP.NET? **[4]**
- b) Explain in detail architecture of ASP.NET. **[4]**

Q4) Attempt the following : **[10]**

- a) i) What is caching? Explain it. **[2]**
- ii) Explain repeater control using example. **[4]**
- b) What is CSS? Explain with example. **[4]**

Q5) Attempt any two of the following : **[10]**

- a) What is the difference between GET method () and POST method (). **[5]**
- b) Explain important name space and classes of ADO.NET. **[5]**
- c) Explain inheritance & types of inheritance in ASP.NET. **[5]**

x x x

Total No. of Questions : 5]

SEAT No. :

PC4007

[Total No. of Pages : 2

[6348]-106

M.Sc. - I

COMPUTER APPLICATION

CA-CBOTP-1C : Software Testing (Manual Testing)

(2019 Pattern) (Semester - I)

Time : 2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) *Question 1 is compulsory.*
- 2) *Solve any 3 questions from Q2 to Q5.*
- 3) *Questions 2 to 5 carry equal marks.*

Q1) Solve any five of the following :

[5]

- a) What does SDLC stand for?
- b) What is unit Testing?
- c) Define “Defect Management” in software testing.
- d) What is a Test Scenario?
- e) What is Test Execution in software testing?
- f) Define Regression Testing.

Q2) Attempt the following :

[10]

- a)
 - i) Differentiate between system testing and UAT testing. **[2]**
 - ii) Explain the main objectives of software testing. **[4]**
- b) Explain the importance of Regression Testing in iterative software development. **[4]**

P.T.O.

Q3) Attempt the following : [10]

- a) i) What is the objective of Database testing? [2]
- ii) Describe the key elements of a Test Plan and their significance in the testing process. [4]
- b) Describe the use cases and benefits of Exploratory Testing. [4]

Q4) Attempt the following : [10]

- a) i) Explain the role of a Test Strategy in a Test Plan. [2]
- ii) Explain the importance of Test Metrics and how they are used to assess testing progress and effectiveness. [4]
- b) What is the difference between smoke testing and sanity testing? [4]

Q5) Attempt the following : (any two) [10]

- a) Describe the stages of the software testing life cycle (STLC) in detail.[5]
- b) Describe the essential components of a Defect Report. [5]
- c) Compare and contrast the goals and techniques of Functional Testing and Non-Functional Testing. [5]

x x x

Total No. of Questions : 7]

SEAT No. :

PC4008

[6348]-201

[Total No. of Pages :2

M.Sc. - I (Computer Application)

CA-CCTP-4 : DATA MINING AND DATA WAREHOUSING

(2019 Pattern) (Semester- II)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Question 1 is compulsory.
- 2) Solve any 5 questions from Q2 to Q7.
- 3) Questions 2 to 7 carry equal marks.

Q1) Solve any five of the following: [10]

- a) State any one example of data mining.
- b) What is Data cube?
- c) What is FP Tree?
- d) What is classification?
- e) What is Recall?
- f) What are two types of clustering?

Q2) Attempt the following:

- a) i) What is precision? [2]
ii) Explain Tree mining with example. [5]
- b) Differentiate between OLAP and OLTP. [5]

Q3) Attempt the following:

- a) i) What is structure of star schema? [2]
ii) What are two steps of Apriori algorithm? [5]
- b) What is SUM? [5]

Q4) Attempt the following:

- a) i) What is cross validation? [2]
ii) Consider the following set of transactions and generate candidate item sets and frequent item sets with minimum support count of 2. Apply Apriori algorithm to findout frequent itemset. [5]

TID	Items
T1	{Pasta, lemon, bread, orange}
T2	{Pasta, lemon}
T3	{Pasta, orange, cake}
T4	{Pasta, lemon, orange, cake}

- b) What are different issues faced in classification? [5]

P.T.O.

Q5) Attempt the following:

- a) i) What is bootstrap? [2]
- ii) What are various issues faced in data mining? [5]
- b) Consider the following dataset. [5]

Chills	Runny Nose	Headache	Fever	Flu
Y	N	Mild	Y	N
Y	Y	No	N	Y
Y	N	Strong	Y	Y
N	Y	Mild	Y	Y
N	N	No	N	N
N	Y	Strong	Y	Y
N	Y	Strong	N	N
Y	Y	Mild	Y	Y

Apply Naive Bayes classifier and classify the following tuple whether it belongs to class Flu, Yes or Not?

$X = \{\text{chills} = Y, \text{Runny Nose} = N, \text{headache} = \text{mild}, \text{fever} = Y\}$

Q6) Attempt the following:

- a) i) What is dendrogram? [2]
- ii) What are advantages and disadvantages of k-means algorithm? [5]
- b) Explain snowflake schema with example. [5]

Q7) Write short notes on any two of the following:

- a) Data Preprocessing [6]
- b) Nonlinear Regression [6]
- c) Hierarchical clustering [6]



Total No. of Questions : 7]

SEAT No. :

[Total No. of Pages : 3

PC4009

[6348]-202

First Year M.Sc. (CA)

CA - CCTP -5 : OPERATING SYSTEMS

(2019 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Q.1. is compulsory.*
- 2) *Attempt any Five questions from Q. 2. to Q. 7.*
- 3) *Q.2. to Q.7. carry equal marks.*

Q1) Solve any five of the following.

[5×2=10]

- a) Explain in short role of Kernel in UNIX OS.
- b) What is mean by Command?
- c) What is file? List types of files.
- d) Define parent and child process in UNIX OS.
- e) Which are different types of shells?
- f) Define hardlink, softlink.

Q2) Answer the following.

- a)
 - i) Explain mechanism of process creation. **[3]**
 - ii) Explain 'man' command in detail. **[4]**
- b) Explain following commands with syntax. **[5]**
 - i) mkdir
 - ii) rmdir
 - iii) cat
 - iv) mv
 - v) CP

P.T.O.

Q3) Answer the following.

- a) i) Explain different wild card characters used for file name generation. [3]
- ii) Explain directory structure of UNIX OS. [4]
- b) Write a shell script to find number of lines and characters from the file.[5]

Q4) Answer the following.

- a) i) Which are different shell variables available in UNIX OS? Explain in short. [3]
- ii) Explain 'at' command in detail. [4]
- b) Which are three types of users in unix operating System? Which Commands are used to add, modify and delete users from UNIX OS?[5]

Q5) Answer the following.

- a) i) Explain in short different navigation command in UNIX. [3]
- ii) Explain following commands with example : [4]
 - 1) grep
 - 2) egrep
- b) What is mean by UNIX OS? Explain its features. [5]

Q6) Answer the following.

a) i) Explain following commands. [3]

1) echo

2) printf

3) cal

ii) Explain short command with its usage and options. [4]

b) Explain different modes of Vi editor with diagram. [5]

Q7) Answer the following. (any two) [2×6=12]

a) Write note on ownership of UNIX file. Explain three types of permission in UNIX. [6]

b) Explain following commands with example : [6]

i) head

ii) tail

iii) set

c) What is a process? Explain structure of PCB with suitable diagram. [6]



Total No. of Questions : 7]

SEAT No. :

PC4010

[Total No. of Pages : 2

[6348]-203

**First Year M.Sc. (Computer Applications)
CA-CCTP - 6 : COMPUTER NETWORKS
(2019 Pattern) (Semester - II)**

Time :3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Question 1 is compulsory.
- 2) Solve any five questions from Q.2 to Q.7.
- 3) Questions 2 to 7 carry equal marks.

Q1) Attempt any 5 of the following.

[10]

- a) Define protocol. What are the key elements of protocol?
- b) What is addressing? Define logical addressing.
- c) What is transmission impairment? What is attenuation?
- d) List the elementary data link layer protocols.
- e) Write any two differences between pure and slotted ALOHA.
- f) Enlist any two services provided by Network layer to transport layer.

Q2) Attempt the following.

- a) Explain the working of electronic - mail. How SMTP is used in email applications. **[7]**
- b) What is UDP? Explain in detail. **[5]**

Q3) Attempt the following.

- a) List and explain different service primitives in data communication. **[7]**
- b) Discuss the TCP/IP model in detail. **[5]**

P.T.O.

Q4) Attempt the following.

- a) Discuss the circuit, message and packet switching techniques in detail.[7]
- b) Explain Hamming code with example. [5]

Q5) Attempt the following.

- a) Discuss classfull addressing with its type. [7]
- b) What is CSMA? Discuss its types. [5]

Q6) Attempt the following.

- a) What is line coding? What are its types? Convert the following data into NRZ - L and NRZ - I. [7]

01001110

- b) Compare virtual circuit and datagram. [5]

Q7) Write short notes on following. [12]

- a) Telnet
- b) Transport layer functions
- c) WDM



Total No. of Questions : 5]

SEAT No. :

PC4011

[Total No. of Pages : 2

[6348]-204

M.Sc. - I

(Computer Applications)

CA - CBOTP - 2A : JAVA PROGRAMMING

(2019 Pattern) (Semester - II)

Time :2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) Question 1 is compulsory.
- 2) Solve any 3 questions from Q2 to Q5.
- 3) Questions 2 to 5 carry equal marks.

Q1) Solve any five of the following. [5]

- a) What is JDBC result set?
- b) List any two methods of HttpServlet class.
- c) What is the use of the 'Super' Keyword in Java?
- d) Name the package which contains the applet class.
- e) What is JIT in Java?
- f) What is the use of finalize () method?
- g) Which implicit object is used to access information about HTTP request?

Q2) Attempt the following. [10]

- a)
 - i) Define package and given syntax to create package. [2]
 - ii) What is the MVC architecture in Java? Explain the components of the MVC architecture. [4]
- b) Define an abstract class shape and calculate the area of circle and rectangle. Write a java program to accept the values from user. [4]

P.T.O.

Q3) Attempt the following. [10]

- a) i) What is garbage collection in Java? [2]
- ii) What is JDBC? Explain the different types of JDBC drivers? [4]
- b) Write a simple JSP program that displays “Hello, World!” on the screen.[4]

Q4) Attempt the following. [10]

- a) i) What is the purpose of a wrapper class in Java? [2]
- ii) What is an applet in Java? Explain lifecycle of an applet in Java. [4]
- b) What is inheritance in Java? List the different types of inheritance. Explain with an example. [4]

Q5) Attempt any two the following. [10]

- a) What is session tracking in servlets? Explain the different techniques for session tracking. [5]
- b) Write note on. [5]
 - i) Constructor
 - ii) Java. io package
- c) Write a java program “Divide By Zero” that takes two numbers a and b as input, computes a/b, and invokes Arithmetic Exception to generate a message when the denominator is zero. [5]



Total No. of Questions : 5]

SEAT No. :

PC4012

[Total No. of Pages : 2

[6348]-205

M.Sc. - I (Computer Applications)
CA-CBOTP - 2B : WEB SERVICES
(2019 Pattern) (Semester - II)

Time :2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) Question 1 is compulsory.
- 2) Solve any three questions from Q.2 to Q.5.
- 3) Questions 2 to 5 carry equal marks.

Q1) Solve any five of the following. [5]

- a) Write one classic example of stateless property of webservice.
- b) State the meaning of UDDI.
- c) What do you mean by WSDL?
- d) What is encoding style attribute?
- e) State any one example where SOAP is used.
- f) What is REST architecture?

Q2) Attempt the following.

- a) i) Write all WSDL key structure elements. [2]
ii) State the challenges of using web services. [4]
- b) State the various advantages of SOAP. [4]

Q3) Attempt the following.

- a) i) What is role played by SOAP between two conversing endpoints?[2]
ii) Explain REST ful web services in detail. [4]
- b) Explain in brief UDDI. [4]

P.T.O.

Q4) Attempt the following.

- a) i) What are two sections of UDDI? [2]
- ii) How to develop SOAP web services using ASP.NET? [4]
- b) What is JSON? Explain its message format. [4]

Q5) Attempt the following (any two).

- a) What are the basic steps to be followed for implementation of web services? [5]
- b) Write a short note on building SOAP web services. [5]
- c) State the steps to be followed for deleting information in UDDI. [5]



Total No. of Questions : 5]

SEAT No. :

PC-4013

[Total No. of Pages : 2

[6348] - 206

M.Sc. (Computer Applications)

CA-CBOTP-2C: Software Testing (Automation)

(2019 Pattern) (Semester - II)

Time : 2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) Q. 1 is compulsory.
- 2) Solve any three questions from Q. 2 to Q. 5.
- 3) Questions 2 to 5 carry equal marks.

Q1) Solve any Five of the following :

[5]

- a) What is Automation testing?
- b) Write any one feature of selenium web driver.
- c) What is testng listeners?
- d) How node timeout will be checked in selenium grid?
- e) What is hub in selenium grid?
- f) State any one example of POM?

Q2) Attempt the following :

- a) i) State different components in selenium. **[2]**
- ii) How to handle drag and drop in selenium web driver? **[4]**
- b) How to check reports generated by test NG? **[4]**

P.T.O.

Q3) Attempt the following :

- a) i) What is POM? [2]
- ii) How to decide number of browsers on node? [4]
- b) Differentiate between maxsession and maxinstance. [4]

Q4) Attempt the following :

- a) i) What is X-Path in selenium? [2]
- ii) Explain how to configure JSON file format to initialize hub? [4]
- b) Write various advantages of automation testing. [4]

Q5) Attempt any two of the following :

- a) Explain how to handle various validation commands in selenium. [5]
- b) How to handle dropdown list in selenium? [5]
- c) How to handle web calendar in selenium web driver? [5]



Total No. of Questions : 7]

SEAT No. :

PC4014

[6348]-301

[Total No. of Pages : 2

S.Y. M.Sc. (Computer Application)

**CA-CCTP-7 : MOBILE APPLICATION DEVELOPMENT USING
ANDROID**

(2019 Pattern) (Semester - III)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Question No. 1 is compulsory.*
- 2) *Solve any five questions from Q.2 to Q.7.*
- 3) *Questions 2 to 7 carry equal marks.*
- 4) *Draw diagram wherever necessary.*

Q1) Solve any five of the following :

[10]

- a) What is Toast? Give example.
- b) What is android?
- c) Explain X code in short.
- d) Write any two feature of IOS.
- e) Give any two layouts with example.
- f) Explain any two methods of solite open Helper.

Q2) Attempt the following :

- a) Explain with help of diagram application life cycle of IOS. **[7]**
- b) What is worker Thread? Give an example. **[5]**

Q3) Attempt the following :

- a) What is Menu? Explain different types of Menu. **[7]**
- b) Differentiate between : Location based services and Google Map. **[5]**

P.T.O.

Q4) Attempt the following :

- a) Explain different type of view Groups with example. [7]
- b) Write an android program which send welcome message from one activity to another activity in Red color with help of button. [5]

Q5) Attempt the following :

- a) Describe JSON parsing with example. [7]
- b) Write short note on adapters and its types. [5]

Q6) Attempt the following :

- a) Write a note on Adapters & widgets. [7]
- b) Write an android program to insert employee details and display using SQLite. [5]

Q7) Write short note on any two : [12]

- a) Alarms
- b) Menu
- c) Restful web service.

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Total No. of Questions : 7]

SEAT No. :

PC4015

[Total No. of Pages : 2

[6348]-302

**S.Y.M.Sc. (Computer Application)
CA-CCTP - 8 : INTERNET OF THINGS
(2019 Pattern) (Semester - III)**

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Question 1 is compulsory.*
- 2) Solve any five questions from Q.2 to Q.7.*
- 3) Questions 2 to 7 carry equal marks.*
- 4) Draw neat labeled diagram wherever necessary.*

Q1) Solve any FIVE of the following.

[10]

- a) State short range communication protocols used in IoT.
- b) Enlist cloud services. Explain any one.
- c) What are the challenges faced by IoT devices?
- d) What is microcontroller?
- e) Define IoT and explain 'Things' in IoT.
- f) What is an actuator?

Q2) Answer the following.

- a) Describe in detail smart parking system in IoT. **[5]**
- b) Explain advantages and disadvantages of using cloud computing platform. **[7]**

Q3) Answer the following.

- a) Explain architecture of IoT with the help of diagram. **[7]**
- b) Explain any two types of IoT protocol with example [XMPP, MQTT][5]

P.T.O.

Q4) Answer the following.

- a) Explain the types of sensors with the help of example. [7]
- b) Describe in detail water management system in IoT. [5]

Q5) Answer the following.

- a) What is carriers? Explain cloud based Architecture. IoT platform. [7]
- b) Compare COAP and OSGi protocols. [5]

Q6) Answer the following.

- a) Explain working of cloud based IBM IoT platform. [7]
- b) What are the security issues of different layers? Explain in brief. [5]

Q7) Write a short note on any two of the following. [12]

- a) IBM platform
- b) Ethernet TCP/IP
- c) Carriots IoT platform

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Total No. of Questions : 7]

SEAT No. :

PC4016

[Total No. of Pages : 2

[6348]-303

**S.Y.M.Sc. (Computer Applications)
CA-CCTP-9: ARTIFICIAL INTELLIGENCE
(2019 Pattern) (Semester - III)**

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Question No.1 is compulsory.*
- 2) *Solve any 5 questions from Q.2 to Q.7.*
- 3) *Question 2 to 7 carry equal marks.*

Q1) Attempt the following (any five):

[10]

- a) Give some examples of AI in real life.
- b) What is search strategy.
- c) What are the disadvantages of Hill Climbing?
- d) Define Knowledge.
- e) What is First order Logic?
- f) What are the different approaches to knowledge representation?

Q2) Attempt the following.

- a) What is backward chaining. Discuss its properties with example. **[7]**
- b) Explain all primitive acts in Conceptual Dependency. **[5]**

Q3) Attempt the following.

- a) Write Hill climbing Algorithm. **[7]**
- b) Explain the algorithm for Resolution in Propositional Logic. **[5]**

P.T.O.

Q4) Attempt the following.

- a) Consider the following sentences. [7]
 - i) John likes all kinds of food
 - ii) Apples are food
 - iii) Chicken is food
 - iv) Rice is food
 - v) Anything anyone eats and isn't killed by is food.
 - vi) Bill eats peanuts and is still alive.
 - vii) Sue eats everything bill eats. Translate these sentences into predicate logic.
- b) Give the state space representation of "water jug problem", where there are 2 jugs of 4L and 3L respectively. We want 2L water in 4L jug. [5]

Q5) Attempt the following.

- a) What is alpha-beta pruning? Explain with appropriate example. [7]
- b) Write the script for "Going to market". [5]

Q6) Attempt the following.

- a) What is learning? Explain learning from example in detail. [7]
- b) Write advantages and disadvantages of frame representation. [5]

Q7) Write short notes on following. [12]

- a) Declarative Knowledge.
- b) Local Maximum.
- c) Recoverable Problem.



Total No. of Questions : 5]

SEAT No. :

PC4017

[6348]-304

[Total No. of Pages : 2

S.Y. M.Sc. (Computer Applications)
CA-CBOTP-3A : PYTHON PROGRAMMING
(2019 Pattern) (Semester - III)

Time : 2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) *Question 1 is compulsory.*
- 2) *Solve any three questions from Q.2 to Q.5.*
- 3) *Questions 2 to 5 carry equal marks.*

Q1) Solve any five of the following : **[5]**

- a) List any two keywords in Python.
- b) Define Tuple.
- c) Give the difference between mutable and Immutable datatype.
- d) Write the use of lambda function in Python.
- e) State True/False.
“Python is platform independent language”.
- f) Write the use of docstrings in python.

Q2) Attempt the following : **[10]**

- a)
 - i) Describe membership operator in python with example. **[2]**
 - ii) Explain Assertion in python with suitable example. **[4]**
- b) Write a program in python to print sum of digits of a given number (hint Input no. - 123 sum - 6) **[4]**

P.T.O.

Q3) Attempt the following : **[10]**

- a) i) Explain List Comprehension with suitable example. **[2]**
- ii) Write any four functions of strings in python with its use. **[4]**
- b) Write a python program to demonstrate class & object. **[4]**

Q4) Attempt the following : **[10]**

- a) i) Differentiate between List and Dictionary. **[2]**
- ii) Define sets in python and write any three functions of sets with example. **[4]**
- b) Explain exceptions in python with an example. **[4]**

Q5) Attempt any two of the following : **[10]**

- a) Explain types of formal arguments for functions in Python. **[5]**
- b) Write any five applications of python in brief. **[5]**
- c) Write the use of following functions in python with an example. **[5]**
 - i) Filter()
 - ii) map()
 - iii) reduce()

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Total No. of Questions : 5]

SEAT No. :

PC4018

[6348]-305

[Total No. of Pages : 2

S.Y. M.Sc. (Computer Application)

CA-CBOTP-3B : BIG DATA

(2019 Pattern) (Semester - III)

Time : 2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) Question 1 is compulsory.***
- 2) Solve any three from Q.2 to Q.5.***
- 3) Questions 2 to 5 carry equal marks.***

Q1) Solve any five of the following :

[5]

- a) Define Big Data Analytics.
- b) List out the sources of Big Data.
- c) What is RDBMs?
- d) Define HDFS.
- e) What is enterprise data platform?
- f) State Big Data warehouse.

Q2) Answer the following :

- a)
 - i) Explain the characteristics of Big Data. **[2]**
 - ii) Explain the components of Hadoop. **[4]**
- b) Differentiate between SQL and NOSQL Data base. **[4]**

P.T.O.

Q3) Answer the following :

- a) i) Write any two sources of Big Data. [2]
- ii) Explain Hadoop ecosystem in detail. [4]
- b) Explain Big Data warehouse architecture. [4]

Q4) Answer the following :

- a) i) Explain any two challenges of Big Data. [2]
- ii) Explain ETL process in Spark. [4]
- b) Explain Map reduce patterns in details. [4]

Q5) Attempt any two of the following :

- a) Explain any four applications of Big Data. [5]
- b) Write down case study for Facebook of Big Data Analytics. [5]
- c) Explain Big Data work load Design approaches. [5]

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Total No. of Questions : 5]

SEAT No. :

PC4019

[6348]-306

[Total No. of Pages : 2

M.Sc.-II(Computer Application)

CA-CBOTP-3C : DJANGO

(2019 Pattern) (Semester - III)

Time : 2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) *Question 1 is compulsory.*
- 2) *Solve any three questions from Q.2 to Q.5.*
- 3) *Questions 2 to 5 carry equal marks.*

Q1) Solve any five of the following :

[5]

- a) What does the Django command 'manage.py' shell do?
- b) Explain use of path function used in urls.py file, with its syntax.
- c) What is REST API?
- d) Write command to install Django on your system.
- e) How will you take all data from book table in a list.
- f) What is the use of Os.path.dirname (--File--) in this method?

Q2) Answer the following :

- a)
 - i) What is the use of the include function in the urls.py file in Django?[2]
 - ii) What is the difference between a project and an app in Django.[4]
- b) Explain render() and Http response redirect() function in Django. [4]

P.T.O.

Q3) Attempt the following :

- a) i) What is the usage of Django admin.py and setting.py file? [2]
- ii) Explain steps to create Django Project. [4]
- b) Explain Django's Request/Response cycle. [4]

Q4) Attempt the following :

- a) i) What is out of the box Django feature? [2]
- ii) Explain Django Architecture. [4]
- b) Explain model serializer in Django REST framework. [4]

Q5) Attempt any two of the following :

- a) Write a short note on generic view. [5]
- b) Write a code to Serialize Employee (id, name, address, age) data in serializer.py file. [5]
- c) Explain working of Django REST framework. [5]

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