

Total No. of Questions : 5]

SEAT No. :

P6003

[Total No. of Pages : 2

[6144]-301

S.Y. /B.B.A. (Computer Application)

CA - 301 : DIGITAL MARKETING

(2019 Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Neat diagram must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

Q1) Attempt any eight of the following:

[8×2=16]

- a) What is blogging?
- b) What is digital marketing in E-commerce?
- c) What is Resource planning?
- d) What is digital marketing.
- e) What is CRM?
- f) What is upload and download?
- g) Name the tools of social media marketing.
- h) What is web analytics?
- i) What is Internet marketing?
- j) What is Search Engine Results Pages (SERP)

Q2) Attempt any Four of the following :

[4×4=16]

- a) Explain structure of website.
- b) Explain E-Marketing plan?
- c) Explain the SWOT Analysis?
- d) Write advantages of E-mail marketing?
- e) Explain digital marketing and list its advantages.

P.T.O.

Q3) Attempt any Four of the following :

[4×4=16]

- a) Write advantages and disadvantages of CRM?
- b) Write phases in content management lifecycle?
- c) Write 5 D's of digital marketing?
- d) What is social media marketing?
- e) What is difference between SEO & SEM.

Q4) Attempt any Four of the following:

[4×4=16]

- a) What is SEO Content?
- b) Describe the steps to do Cost Control.
- c) Write the difference between Digital Marketing and Traditional Marketing.
- d) Write CRM platform in detail?
- e) Write on types of SEO?

Q5) Write a short note on Any Two of the following:

[2×3=6]

- a) KPI
- b) Target audience
- c) Pay-Per-Click



Total No. of Questions : 5]

SEAT No. :

P-6004

[Total No. of Pages : 3

[6144]-302

S.Y.B.B.A. (C.A.)

CA - 302 : DATA STRUCTURE

(2019 Pattern) (Semester-III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) *All questions are compulsory.*
- 2) *Draw diagram wherever necessary.*
- 3) *Figures to the right indicate full marks.*

Q1) Attempt any Eight of the following.

[8 × 2 = 16]

- a) What is data structure?
- b) What is sorting? State the techniques of sorting.
- c) What is non-primitive data structure?
- d) What is searching?
- e) Mention the features of ADT.
- f) What are the types of linked list?
- g) List down the applications of list.
- h) What is polynomial? How is it represented?
- i) Differentiate array & structure.
- j) What are the applications of stack?

P.T.O.

Q2) Attempt any Four of the following. **[4 × 4 = 16]**

- a) Explain different types of Dynamic Memory Allocation functions.
- b) Explain Linear Data structure with examples.
- c) What is stack? Explain different operations used in stack.
- d) What is algorithm? Explain its characteristics.
- e) Explain selection sort technique with example.

Q3) Attempt any Four of the following. **[4 × 4 = 16]**

- a) Write a function to create & display singly linked list.
- b) Write a function to insert an element into a queue, in which the queue is implemented as array.
- c) Explain BFS traversing technique with an example.
- d) Write a function to preorder traversal of the tree.
- e) Write an algorithm to convert infix expression to postfix expression.

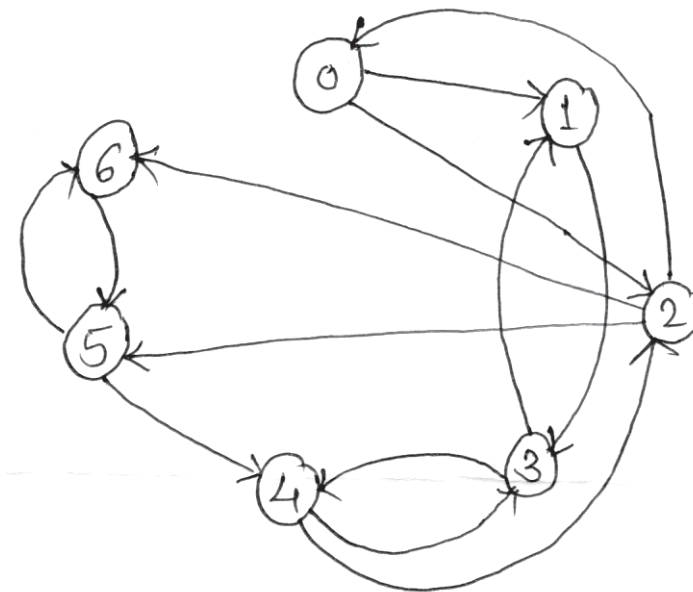
Q4) Attempt any Four of the following: **[4 × 4 = 16]**

- a) Construct an AVL tree of following data.
20, 10, 30, 5, 15, 25, 35, 13, 17
- b) Construct Binary search tree for following data.
78, 95, 2, 57, 13, 29, 61, 10
- c) Sort the following data by using selection sort
12, 11, 13, 5, 6
- d) Write a C- program to display a linked list in Reverse order.
- e) What is Graph? Explain its representation techniques in detail.

Q5) Attempt any two of the following :

[2 × 3= 6]

- a) Convert the following expression into prefix
 - i) $A+B/C*(D - A) ^ F ^ H$
 - ii) $A* (B*C+D*E) + F$
- b) Define the following terms
 - i) Parent Node
 - ii) Sub tree
 - iii) Directed Graph
- c) What is degree of vertex? Find indegree & outdegree of the following graph for each vertex.



Total No. of Questions : 5]

SEAT No. :

P6005

[6144]-303

[Total No. of Pages : 2

S.Y.B.B.A.

**CA - 303 : SOFTWARE ENGINEERING
(2019 Pattern) (Semester - III)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Neat diagram must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

Q1) Attempt any EIGHT of the following:

[8×2=16]

- a) What is system Analyst?
- b) Define data dictionary.
- c) What is SRS?
- d) Define an Entity.
- e) Define unit testing.
- f) State the principles of software testing?
- g) Define open and closed system.
- h) What is prototype?
- i) What is system?
- j) What is feasibility study?

Q2) Attempt any FOUR of the following:

[4×4=16]

- a) Draw first level DFD for Online Food order system.
- b) Define software process and software product. Distinguish between them.
- c) What is SDLC? Describe its phases?
- d) Discuss different fact finding techniques.
- e) Define software maintenance. Explain types of software maintenance.

P.T.O.

Q3) Attempt any FOUR of the following: [4×4=16]

- a) Draw decision table for the following case. A company gives discount on the purchase of goods depending on the sales and duration of payment.
 - i) 5% discount if order amount > 50,000.
 - ii) 3% discount if order amount between 25,000 and 50,000.
 - iii) No discount if order < 10,000 or payment is not done within 8 days.
- b) Define module. Explain types of modules.
- c) Draw ER-Diagram for “Hospital Management System”.
- d) What is Decision Table? Need of Decision table.
- e) Explain elements of Data flow diagrams?

Q4) Attempt any FOUR of the following: [4×4=16]

- a) Material is issued to the department by considering whether the Material Requisition Note (MRN) is signed or not. It contains valid items or not and it is given within 8 Hours or not. Draw decision Tree for the above case.
- b) Differentiate between forward and reverse engineering.
- c) What is Data Flow Diagram? Explain its Advantages & Disadvantages.
- d) Explain spiral model in detail.
- e) Design a screen I/P layout for employee’s Profile.

Q5) Write a short note on Any TWO of the following: [2×3=6]

- a) System Testing.
- b) McCall’s quality factors.
- c) Requirement Gathering.



Total No. of Questions : 5]

SEAT No. :

P-6006

[Total No. of Pages : 2

[6144]-304
B.B.A. (CA)
CA-304 : ANGULAR JS
(2019 Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Neat diagrams must be drawn whenever necessary.*

Q1) Answer the following (Any Eight) :

[8 × 2 = 16]

- a) Write any two advantages of AngularJS?
- b) Write name of any two Editors used for Angular JS.
- c) Explain two-way data binding.
- d) What is controller?
- e) Explain ng-app directive.
- f) What is Dependency Injection.
- g) Write the use of ng-show.
- h) Write short note on \$scope.
- i) Explain ng-if directive.
- j) What are form events?

Q2) Attempt any FOUR of the following:

[4 × 4 = 16]

- a) Explain ng-model in detail with example.
- b) Write any three directives used in AngularJS.
- c) What are the advantages of creating modules?
- d) Write an AngularJS program to enter two numbers in two text boxes and display multiplication result of them.
- e) Write an AngularJS program to showcase the use of ng-click.

P.T.O.

Q3) Attempt any FOUR of the following :

[4 × 4 = 16]

- a) Give the difference between \$rootScope and \$scope.
- b) What are the purposes of AngularJS services? Name any two services.
- c) Explain MVC architecture in detail.
- d) Write a program to demonstrate the use of ng-controller.
- e) Write a simple program to show the use of \$scope.

Q4) Attempt any FOUR of the following :

[4 × 4 = 16]

- a) Write and explain any four methods of \$Scope object.
- b) Explain the working of uppercase and lowercase filters with an example.
- c) Explain \$document service, \$log-service and \$root service in detail.
- d) Write an AngularJS program to create a service to find whether the entered number is prime or not.
- e) Write a program that can generate numbers after an interval of every 1000 ms.

Q5) Attempt any TWO of the following :

[2 × 3 = 6]

- a) SPA
- b) Explain ng-model, ng-required.
- c) Validation in AngularJS.



Total No. of Questions : 5]

SEAT No. :

P-6007

[Total No. of Pages : 2

[6144]-305
S.Y. B.B.A.
CA-304 : PHP
(2019 Pattern) (CBCS) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Neat diagrams must be drawn whenever necessary.*

Q1) Attempt any EIGHT (out of TEN)

[8 × 2 = 16]

- a) What is indexed array?
- b) What is difference between “echo” and “print”?
- c) Explain Krsort() function in PHP.
- d) What is the use of Sticky form in PHP?
- e) Explain setcookie () function in PHP.
- f) What is \$_SESSION in PHP?
- g) Explain var_dump function in PHP.
- h) What is Ternary operator in PHP?
- i) Explain array_slice function in PHP.
- j) Explain mysqli_connect() in PHP.

Q2) Attempt any FOUR (out of FIVE) :

[4 × 4 = 16]

- a) What are the features of PHP.
- b) Write a PHP script to find the sum of digits of a number.
- c) Explain for loop and foreach loop with example.
- d) Explain cookies in PHP.
- e) Explain any two Built-in Array functions in PHP.

P.T.O.

Q3) Attempt any Four (out of FIVE) : **[4 × 4 = 16]**

- a) Write a PHP script to display table of a number?
- b) Write any two Built-in functions of String with example.
- c) Write a code in PHP which accepts two strings from user and displays them after concatenation.
- d) Write a PHP program to calculate factorial of a number.
- e) Write a PHP script to check whether a number is prime or not.

Q4) Attempt any Four of the following. (out of FIVE) **[4 × 4 = 16]**

- a) Explain the concept of sticky form with suitable example.
- b) Explain Email id validation in PHP through regular expression.
- c) Write PHP program for arsort() function.
- d) Write a PHP program to display record of employee with fields(empid,empname,salary,dept).
- e) Write a PHP program to create login page and welcome user on next page.

Q5) Write a short note on any two (out of THREE) : **[2 × 3 = 6]**

- a) Form and Form elements.
- b) Assignment operators in PHP.
- c) List different php MySQLi functions.



Total No. of Questions : 5]

SEAT No. :

P6008

[Total No. of Pages : 2

[6144]-306

S.Y.B.B.A. (Computer Application)

CA - 305 : BIG DATA

(2019 CBCS Pattern) (Semester -III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to right indicates full marks.*

Q1) Attempt any EIGHT of the following:

[8×2=16]

- a) What is predictive analytics?
- b) What are the applications of Association Rule Mining?
- c) What is WEKA?
- d) Write any two advantages of Big Data.
- e) Define Regression Analysis.
- f) Write four applications of Data Science.
- g) Write any two needs of Machine Learning.
- h) Write two disadvantages of EM algorithm.
- i) What is R?
- j) Enlist any four tools used for Big Data.

Q2) Attempt any FOUR of the following.

[4×4=16]

- a) Explain the advantages and disadvantages of Apriori algorithm.
- b) Explain four data types in R.
- c) Explain four types of Correlation.
- d) Explain Statistical Inference with suitable diagram.
- e) Differentiate between structured and Unstructured Data.

P.T.O.

Q3) Attempt any FOUR of the following : [4×4=16]

- a) Explain 5V's of Big Data.
- b) Explain the phases of Data Analytics Life Cycle.
- c) Explain *for* loop in R programming with syntax and example.
- d) Explain Naive Bayes Algorithm in detail.
- e) Explain Head () and Tail () functions in *dplyr* package.

Q4) Attempt any FOUR of the following : [4×4=16]

- a) Explain four applications of Big Data.
- b) What is population? Explain different types of population.
- c) Write an R program to sort a Vector in ascending and descending order.
- d) Write an R program to create a simple bar plot of five subject's marks.
- e) Write an R program to calculate Multiplication Table.

Q5) Write a short note on any TWO of the following : [2×3=6]

- a) Advantages of SVM algorithm.
- b) Statistical Modeling.
- c) Data Analysis.



Total No. of Questions : 5]

SEAT No. :

P6009

[Total No. of Pages : 2

[6144]-307
S.Y.B.B.A. (C.A.)
CA - 305 : BLOCKCHAIN
(2019 Pattern) (Semester -III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicates full marks.*

Q1) Attempt any EIGHT of the following (Out of TEN).

[8×2=16]

- a) Define Block and Chain.
- b) Define Database.
- c) What is hyperledger?
- d) What is chain code?
- e) What is public key?
- f) What is mining?
- g) What is proof of Stake?
- h) What happen when someone loses the private key of his wallet.
- i) What is nonce?
- j) What is Cryptography?

Q2) Attempt any FOUR of the following (Out of FIVE).

[4×4=16]

- a) What are the uses of SHA algorithm?
- b) Explain different layers of Blockchain.
- c) What is Gas and Gas limit?
- d) What is DAO? Explain in details.
- e) Explain public and private blockchain.

P.T.O.

Q3) Attempt any FOUR of the following (Out of FIVE). **[4×4=16]**

- a) What are the advantages of Hyperledger Fabric for blockchain networks.
- b) What are consensus algorithms in blockchain?
- c) What is Blockchain? What the Features Blockchain.
- d) What are the advantages of DApps?
- e) Which are the components of blockchain?

Q4) Attempt any FOUR of the following (Out of FIVE). **[4×4=16]**

- a) What are the Advantages of practical Byzantine Fault Tolerance (pBFT).
- b) Explain the layered architecture of blockchain.
- c) Write are the advantages of Hyperledger Fabric for blockchain networks.
- d) Explain the Types of Ethereum Clients.
- e) Define transaction and explain its structure.

Q5) Write a short note on any TWO of the following (Out of THREE). **[2×3=6]**

- a) Write a short note on Crypto wallet.
- b) Write a short note on Evolution of blockchain.
- c) Write a short note on actors of Blockchain.



Total No. of Questions : 5]

SEAT No. :

P6010

[6144] - 401

[Total No. of Pages :2

S.Y.B.B.A. (Computer Application)
CA-401 : NETWORKING
(CBCS 2019 Pattern) (Semester-IV)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Neat diagrams must be drawn whenever necessary.*

Q1) Attempt any three of the following.

[3×5=15]

- a) What is ungelided media? Explain types of ungelided media?
- b) What is switch? How does it differ from HUB?
- c) What is copyright? Explain applications of copyright?
- d) Differentiate between connection oriented and connectionless services?

Q2) Attempt any three of the following.

[3×5=15]

- a) Explain functions of each layer ISO-OSI reference model?
- b) What is Backbone Network? Explain types of Backbone network.
- c) State advantages and disadvantages of LAN, with uses?
- d) Explain Ground wave propagation with diagram?

Q3) Attempt any three of the following.

[3×5=15]

- a) Define computer network? Explain goals of computer network.
- b) What is attack? Explain various types attack.
- c) What is gateways? Explain various levels of gateways.
- d) What is NLAN? What are the features of VLAN.

P.T.O.

Q4) Attempt any three of the following.

[3×5=15]

- a) Explain TCP/IP protocol in detail?
- b) What is HUB? Explain types of HUB?
- c) Explain bluetooth architecture in detail?
- d) Explain different modes of communication?

Q5) Write notes on: (any two)

[2×5=10]

- a) Proxy Server
- b) Fiber optic cable
- c) IP addressing
- d) Topology



Total No. of Questions : 5]

SEAT No. :

P-6011

[Total No. of Pages : 3

[6144]-402

B.B.A. (CA)

**CA-402 : OBJECT ORIENTED CONCEPTS THROUGH
CPP**

(2019 Pattern) (Semester - IV)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All question are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Attempt any eight of the following (out of ten)

[8 × 2 = 16]

- a) List any four features of OOP's.
- b) Define pure virtual function.
- c) What is cascading of I/O operator?
- d) List the ways to define a constant.
- e) What is an abstract class?
- f) Define multiple inheritance.
- g) Define destructor.
- h) What is 'this' pointer?
- i) What is Run-Time Polymorphism?
- j) Enlist manipulators in C++.

Q2) Attempt any FOUR of the following (out of FIVE)

[4 × 4 = 16]

- a) Explain function overloading with example.
- b) What is inheritance? Explain types of inheritance.
- c) Explain static data members and static member functions with example.
- d) What is friend function? Write characteristics of friend function.
- e) Explain use of any four file opening modes.

P.T.O.

Q3) Attempt any Four of the following (out of FIVE) **[4 × 4 = 16]**

- a) Write a C++ program to create a class product which contains data members as pname, price, quantity. Write member functions to accept quantity for n products and accordingly generate and display bill.
- b) Design a base class person (name, address, phoneno). Derive a class employee (eno,ename) from person derive a class manager (designation, department, basic-salary) from Employee. Accept all details of 'n' managers and display manager having highest basic salary.
- c) Write a C++ program to overload the functions to calculate area of circle, square and rectangle.
- d) Write a C++ program to print the following pattern
A
B C
D E F
G H I J
- e) Write a C++ program to accept length and width of a rectangle. Calculate and display perimeter of a rectangle by using inline function.

Q4) Attempt any Four of the following (out of Five) **[4 × 4 = 16]**

- a) Trace output of following program and explain it. Assume there is no syntax error.

```
#include <iostream.h>

Class Number
{
    Public :   int a, b ;
              static int cnt ;

    Number (int x, int y)
    {
        cout << "\n constructor called";
        a = x ;
        b = y ;
        cnt ++ ;
    }
}
```

```

    }
    void display ()
    {
        cout <<"\n a =" <<a<< "\n b =" <<b;
    }
}
int Number :: cnt ;
void main ()
{   Number N1(4, 6), N2(2, 8);
    cout <<"\n Total object created :"
        <<Number :: cnt ;
}

```

- b) Explain parameterized constructor with the help of suitable example.
- c) Explain virtual base class with example.
- d) Write a C++ program to find maximum of two integer numbers using function template.
- e) Write a program to overload binary plus operator to concatenation of two strings.

Q5) Write a short note on any two of the following.

[2 × 3 = 6]

- a) Array of object
- b) Access specifier
- c) Constructor in derived class



Total No. of Questions : 5]

SEAT No. :

P6012

[Total No. of Pages : 2

[6144]-403
S.Y.B.B.A. (C.A.)
CA - 403 : OPERATING SYSTEM
(2019 Pattern) (Semester -IV)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicates full marks.*

Q1) Attempt any 8 of the following.

[8×2=16]

- a) Define process.
- b) What is context switch?
- c) What is a page frame?
- d) List various operations on files.
- e) What is meant by rotational latency in disk scheduling?
- f) Define critical section.
- g) State Belady's anomaly.
- h) List any 4 characteristics of operating system.
- i) Define dead lock.
- j) What is the role of operating system?

Q2) Attempt any 4 of the following.

[4×4=16]

- a) 'Operating system is like a manager of the computer system'. Explain.
- b) What is scheduling? Compare short term scheduler with medium term scheduler.
- c) Draw and explain process control block. (PCB).
- d) Compare multiprogramming with a multiprocessing system.
- e) Draw and explain the process state diagram.

P.T.O.

Q3) Attempt any 4 of the following.

[4×4=16]

- a) Compare internal and external fragmentation.
- b) Consider the following set of processes with the length of the CPU burst time given in milli seconds.

Process	Burst Time
P1	10
P2	1
P3	2
P4	1
P5	5

All processes arrived at time () in the order P1, P2, P3, P4, P5.

- i) Draw Gantt chart using SJF method.
 - ii) Calculate average turnaround time and average waiting time.
- c) Explain semaphores and its types.
 - d) What is deadlock? Explain various deadlock handling techniques.
 - e) What are the different types of directory structure? Explain.

Q4) Attempt any 4 of the following.

[4×4=16]

- a) Explain linked allocation in files.
- b) Compare paging and segmentation.
- c) Assume there are total 200 tracks present on the disk. If the request queue is:
84, 145, 89, 168, 93, 128, 100, 68 and initial position of head is 125.
Apply FCFS disk scheduling algorithm and calculate total head movement.
- d) Explain file structure with the help of a diagram.
- e) Consider the following page reference string
9, 2, 3, 4, 2, 5, 2, 6, 4, 5, 2, 5, 4, 3, 4, 2, 3, 9, 2, 3
The number of page frames is 4. Calculate the page faults for the given page replacement scheme using FIFO (First in first out)

Q5) Write short note any two :

[2×3=6]

- a) Spooling.
- b) Dining Philosopher's problem.
- c) Contiguous memory allocation.



Total No. of Questions : 5]

SEAT No. :

P-6014

[Total No. of Pages : 2

[6144]-404

S.Y. B.B.A. (Computer Application)

CA-404 : NODE JS

(2019 Pattern) (Semester - IV)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Answer the following (Any Eight) :

[8 × 2 = 16]

- a) What is the command to initialize node package manager? Write it's syntax.
- b) For which task a file system module is used?
- c) What is REPL?
- d) What is express.js?
- e) What is the use of prompt-sync module?
- f) List any four core modules in Nodejs?
- g) Which command is used for deleting a file?
- h) Write syntax to create Buffer?
- i) Write a command to install MySQL package by using NPM?

Q2) Answer the following (Any Four) :

[4 × 4 = 16]

- a) How we install a package globally in node js write it's command with example?
- b) What is the advantages of Nodejs?
- c) Explain Node's Process Mode?
- d) How does Node.js handles a file request.
- e) Write down the command to create package.js file with example?

P.T.O.

Q3) Answer the following (any four) :

[4 × 4 = 16]

- a) How to write asynchronous data to a file explain with suitable example?
- b) Write a program which uses add Listener (). method of Event Emitter class.
- c) Write a short note on NPM.
- d) Write a code for selecting all records from Player's table.
- e) Explain module. exports in Node.js.

Q4) Answer the following (Any Four) :

[4 × 4 = 16]

- a) Compare Traditional webserver Model and Node.js process Model.
- b) Write Node.js application to create user defined square module to find area of square & display the details on console.
- c) What is web server?
- d) Write a program to create a file in Node.js.
- e) Explain parameter's of create connection?

Q5) Answer following (Any Two)

[2 × 3 = 6]

- a) Explain Event driven programming.
- b) What is Anonymous function?
- c) Explain is module?



Total No. of Questions : 5]

SEAT No. :

P-6013

[Total No. of Pages : 2

[6144]-405

**S.Y. B.B.A. (Computer Application)
CA-404 : ADVANCED PHP
(2019 Pattern) (CBCS) (Semester - IV)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Figures to the right indicate full marks.*
- 3) Neat diagrams must be drawn wherever necessary.*

Q1) Attempt any EIGHT of the following.

[8 × 2 = 16]

- a) Explain the purpose of \$ this variable.
- b) Name any two functions to extract basic information about classes in PHP.
- c) What is SOAP?
- d) What is Web Services?
- e) List any two PHP HTTP functions.
- f) What is setcookie () function?
- g) Enlist the PHP Dom's function.
- h) What is XML passer?
- i) Which are the parts of XML-RPC?
- j) Give any two applications of AJAX.

Q2) Attempt any FOUR of the following.

[4 × 4 = 16]

- a) What is Introspections? Explain any two introspective function?
- b) What is sticky form? Explain with example.
- c) Explain how to create and select database using PHP.
- d) Explain AJAX web application model.
- e) How to handle file upload in PHP?

P.T.O.

Q3) Attempt any FOUR of the following. **[4 × 4 = 16]**

- a) Create a XML file which gives details of books available in "xyz Bookstore" from the following categories : (i) Technical (ii) General knowledge (iii) Fitness
- b) Write php script to create CD catlog using XML file.
- c) Write a PHP program to create student registration form and display student information (use sticky form concept)
- d) Create student table as follows : student (sno sname, per) Write Ajax program to select the student name and print the selected student's details.
- e) Define a class Employee having private members _id, name, department, salary. Define parameterized constructors. Create a sub class called 'Clerk' with private member bonus. Create one objects of the clerk class and display the details of the clerk having the maximum total salary (salary + bonus).

Q4) Attempt any FOUR of the following : **[4 × 4 = 16]**

- a) Define class and object. Explain with example.
- b) What is PHP session? Explain to start and how to destroy php session with example.
- c) Write PHP script to create 'product.xml', which contain p_no, p_name, color, weight. Add four element into it. Write PHP script to display product. XML in table format.
- d) Write a PHP program which implements AJAX for additional of two numbers.
- e) Differentiate between GET and Post method.

Q5) Write a short note on any Two of the following. **[2 × 3 = 6]**

- a) Super Global variables
- b) AJAX
- c) Content management system



Total No. of Questions : 5]

SEAT No. :

P6015

[Total No. of Pages : 2

[6144]-501
T.Y.B.B.A. (C.A.)
CA - 501 : CYBER SECURITY
(2019 Pattern) (Semester - V)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Neat diagram must be drawn wherever necessary.*
- 3) *Figures to the right indicates full marks.*

Q1) Attempt any EIGHT of the following. (Out of TEN).

[8×2=16]

- a) What is Phishing?
- b) Define Cyber Terrorism?
- c) Define term Cyber Security.
- d) What is Public-key Certification in Digital Signature?
- e) Define term Cybercrime.
- f) What is reconnaissance?
- g) Define denial-of-service (DoS) attack.
- h) Define attack vector?
- i) What is Steganography?
- j) What is online fraud?

Q2) Attempt any FOUR of the following. (Out of FIVE).

[4×4=16]

- a) Why there is need of Computer Forensic?
- b) Discuss various password cracking techniques.
- c) Discuss different types of active attack and passive attack?
- d) Explain how botnets can be used as a fuel to cybercrime.
- e) What is SQL injection and what are the different counter measures to prevent the attack?

P.T.O.

Q3) Attempt any FOUR of the following. (Out of FIVE). [4×4=16]

- a) What are the consequences of cybercrime and their associated cost?
- b) Explain in brief each type of Intellectual Property.
- c) What are the challenges to Indian Law and cybercrime scenario in India?
- d) Explain the cyber security real life incident example.
- e) What is cyber forensics explain in details?

Q4) Attempt any FOUR of the following. (Out of FIVE). [4×4=16]

- a) Define virus. Discuss the types of viruses.
- b) What is Domain Name? Explain with example.
- c) What is CIA? Discuss three concept of CIA model.
- d) Explain different types of credit card frauds.
- e) Explain the rules of Digital Evidence.

Q5) Write a short note on any TWO of the following. (Out of THREE) [2×3=6]

- a) Copyrights.
- b) The ITA 2000 sections.
- c) Online Scams.



Total No. of Questions : 5]

SEAT No. :

P-6016

[Total No. of Pages : 2

[6144]-502

T.Y. B.B.A. (C.A.)

**CA-502 : OBJECT ORIENTED SOFTWARE
ENGINEERING**

(2019 Pattern) (CBCS) (Semester - V)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Neat diagrams must be drawn wherever necessary.*

Q1) Attempt any five of the following :

[5 × 2 = 10]

- a) Define forking.
- b) What is Inception?
- c) Define the term object orientation.
- d) Define Tagged value.
- e) List any four characteristics of a system.
- f) What is meant by Elaboration?
- g) Write down the purpose of the object diagram.

Q2) Attempt any four of the following :

[4 × 4 = 16]

- a) Explain UML architecture.
- b) Explain visibility modes along with labelled diagram.
- c) Describe UP phases with the help of diagram.
- d) What is risk management in project management?
- e) Explain activity diagram with Notations.

P.T.O.

Q3) Attempt any four of the following :

[4 × 4 = 16]

- a) Explain the concept of Aggregation with example.
- b) What is classifier? Explain different classifiers.
- c) Define the following terms :
 - i) Composition
 - ii) System boundary
 - iii) Swim lane
 - iv) Note
- d) Explain Deployment diagram. State any four notation of deployment diagram.
- e) What is SRS? Explain types of SRS specification.

Q4) Attempt any four of the following :

[4 × 4 = 16]

- a) Define thing. Explain type of things in UML.
- b) Explain Jacobson method of object oriented design.
- c) Define relationship. Explain different kinds of relationship.
- d) What is package? Explain different kinds of packages.
- e) What do you mean by task management components?

Q5) Attempt the following :

[12]

Online mobile recharge gives us the information about all the mobile service providers.

This application provides us the complete information regarding any mobile service provider in terms of their plans, options, benefits etc. suppose any Airtel customer wants to have the information of all the schemes and services provided by the company he/she can have the information and according to his convenience he can recharge the mobile from the same application. The major advantage of this purposed system is to have the recharging facility of any service provider under same roof.

Consider above situation draw the following UML diagram.

- a) Collaboration diagram
- b) Sequence diagram
- c) Activity diagram



Total No. of Questions : 5]

SEAT No. :

P6017

[Total No. of Pages : 2

[6144]-503
T.Y.B.B.A. (C.A.)
CA 503 : CORE JAVA
(2019 Pattern) (Semester -V)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicates full marks.*
- 3) *Neat diagrams must be drawn Wherever necessary.*

Q1) Answer any Eight:

[8×2=16]

- a) What is a java program structure?
- b) Define this Keyword.
- c) Explain in detail the data types in java?
- d) What is an Interface?
- e) What is the use of Reader and Writer class?
- f) Which method is used to specify containers layout with syntax.
- g) What is the default layout for Frame and Panel?
- h) Explain Modifiers and Access Controls used in java.
- i) List and explain any 2 in-built exceptions.
- j) Explain the purpose of getContentPane().

Q2) Attempt any four.

[4×4=16]

- a) Explain in detail the features of Java.
- b) What are the rules for method overloading and method overriding? Explain it with example.
- c) Differentiate between interface and abstract class.
- d) Explain the concept of exception and exception handling.
- e) What are the different types of streams? Explain in details.

P.T.O.

Q3) Attempt any four.

[4×4=16]

- a) Write a java program to display alternate character from a given string.
- b) Write a Java program to calculate area of Circle, Triangle & Rectangle. (Use Method Overloading).
- c) Write a java program to search given name into the array, if it is found then display its index otherwise display appropriate message.
- d) Write a java program to display ASCII values of the characters from a file.
- e) Write a java program to display multiplication table of a given number into the List box by clicking on button.

Q4) Attempt any four :

[4×4=16]

- a) What is collection? Explain Collection framework in details.
- b) Difference between Swing and AWT.
- c) Create a package named Series having three different classes to print series:
 - i) Fibonacci series
 - ii) Cube of numbers
 - iii) Square of numbers

Write a java program to generate 'n' terms of the above series

- d) Write a 'java' program to check whether given number is Armstrong or not. (Use static keyword)
- e) Write a 'java' program to copy only non-numeric data from one file to another file.

Q5) Write short note any two :

[2×3=6]

- a) Define new operator.
- b) Define term finalize () method.
- c) Define package with all the steps for package creation.



Total No. of Questions : 5]

SEAT No. :

P-6018

[Total No. of Pages : 2

[6144]-504

T.Y. B.B.A. (C.A.)

CA-504 : MONGO DB

(2019 Pattern) (Semester - V)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Neat diagram must be drawn wherever necessary.*

Q1) Answer the following (Any 8) :

[16]

- a) What is JSON?
- b) Challenges for Data Modelling in Mongo DB.
- c) Explain use of Mongo DB Shell.
- d) Describe Mongo DB utility.
- e) What is mapreduce?
- f) Explain transaction.
- g) Write a syntax of 'InsertOne'.
- h) Explain lock in MongoDB.
- i) Describe Delete command.
- j) Explain use of pretty function

Q2) Answer the following (Any 4) :

[16]

- a) Why use NoSQL database.
- b) What is the Embedded Data Modeling Approach.
- c) Write a short note on Mongo Shell commands with examples.
- d) Define the aggregation used in Mongo DB.
- e) Write on the 'deleteMany()' operation

P.T.O.

Q3) Answer the following (Any 4) :

[16]

- a) Write the difference between MongoDB and SQL.
- b) Write a short note on various types of NoSQL databases.
- c) Write applications of NoSQL.
- d) Describe the Compound index with a suitable example.
- e) What is the role of the profiler in MongoDB?

Q4) Solve the following :

[16]

- a) Create a collection 'Hospital'.
- b) Create a new document in the 'Hospital' collection having ID=01.
- c) Write a command to show the details of 'Hospital'.
- d) Show the details of 'Hospital' by FIND command.
- e) Display the detail of 'Hospital' by the 'FINDONE' command.
- f) Display the detail of 'Hospital' whose OPD charges are free.
- g) Display ID, Hospital NAME, FEE, and use 'PRETTY()'.
- h) Display details of hospitals, where Fee is less than 200.

Q5) Solve the following (Any 2) :

[6]

- a) Write in detail MongoDB Index types.
- b) Write a short note on Compass used in MongoDB.
- c) Explain advantages of NoSQL databases.



Total No. of Questions : 5]

SEAT No. :

P-6019

[Total No. of Pages : 2

[6144]-505

T.Y. B.B.A. (C.A.)

CA-504 : PYTHON

(2019 Pattern) (Semester - V)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Attempt any eight of the following :

[8 × 2 = 16]

- a) What are the advantages of Pandas?
- b) State the uses of Tensor flow.
- c) Write Syntax of Raise Statement.
- d) List out any 4 label option.
- e) What are the properties of Dictionary?
- f) List out geometry management methods.
- g) Difference between python list and numpy array.
- h) What is the use of random() in random module?
- i) Explain any two tuple operations with on example.
- j) List out any 5 button options in Python.

Q2) Attempt any four of the following :

[4 × 4 = 16]

- a) Explain Frame widget in thinker with example.
- b) Explain function Arguments in details.
- c) Explain any three built in dictionary function with example.
- d) Write a python program to display current date and time.
- e) Write an anonymous function to find area of rectangle.

P.T.O.

Q3) Attempt any four of the following :

[4 × 4 = 16]

- a) What are lists and tuples? What is the key difference between these two?
- b) Explain the concept of inheritance with example.
- c) Explain the features of Numpy.
- d) Write Python GUI program to create back ground with changing colors.
- e) Write a Python Program to implement the concept of queue and list.

Q4) Attempt any four of the following :

[4 × 4 = 16]

- a) Explain the features of pandas in python.
- b) Explain Exception handling in python with example.
- c) Explain methods for geometry management in tkinter with example.
- d) Write a python program to swap the values of two variables.
- e) Explain difference between local and global variable with example.

Q5) Write short note on any two :

[2 × 3 = 6]

- a) Raise Statement
- b) Package
- c) HAS-A Relationship



Total No. of Questions : 5]

SEAT No. :

P6020

[Total No. of Pages : 2

[6144]-601
T.Y.B.B.A. (C.A.)
CA - 601 : RECENT TRENDS IN INFORMATION
TECHNOLOGY
(2019 CBCS Pattern) (Semester -VI)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicates full marks.*

Q1) Attempt any EIGHT of the following (Out of TEN).

[8×2=16]

- a) What is OLTP?
- b) Define artificial intelligence.
- c) Define Data Frames.
- d) What is a Data Mart?
- e) What is data integration?
- f) What is Robotics?
- g) Define spark.
- h) List any two applications of artificial intelligence.
- i) Define graph mining.
- j) What is full form ETL.

Q2) Attempt any FOUR of the following (Out of FIVE).

[4×4=16]

- a) Differentiate between ROLAP and MOLAP servers.
- b) Explain FP tree algorithm.
- c) Explain the working of Spark with the help of its Architecture?
- d) What are the disadvantages of 'Hill Climbing' in artificial intelligence?
- e) Explain briefly data mining task.

P.T.O.

Q3) Attempt any FOUR of the following (Out of FIVE). [4×4=16]

- a) Explain Multidimensional data model in brief.
- b) Explain data preprocessing.
- c) Explain the various search and control strategies in artificial intelligence.
- d) Differentiate between OLAP and OLTP.
- e) Explain different RDD operations in spark.

Q4) Attempt any FOUR of the following (Out of FIVE). [4×4=16]

- a) What is Executor Memory in a Spark application?
- b) What is a heuristic function?
- c) What are the two advantages of 'Depth First Search' (DFS)?
- d) Explain the three important artificial intelligence techniques.
- e) What are the major steps involved in the ETL process?

Q5) Write a short note on any TWO of the following (Out of THREE). [2×3=6]

- a) Spark SQL.
- b) 'Water Jug Problem' in artificial intelligence with the help of diagrams and propose a solution to the problem.
- c) Data Warehouse.



Total No. of Questions : 5]

SEAT No. :

P-6021

[Total No. of Pages : 2

[6144]-602

B.B.A. (C.A.)

CA-602 : SOFTWARE TESTING

(2019 Pattern) (Semester - VI)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Neat diagram must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

Q1) Attempt any EIGHT of the following (out of TEN) : [8 × 2 = 16]

- a) Explain the term performance testing.
- b) Define Big Bang Approach.
- c) Define failure and defect.
- d) Define verification testing.
- e) What is sandwich approach of integration testing?
- f) Define validation Testing.
- g) Explain sandwich approach.
- h) Explain terms - Error, Fault and Failure.
- i) Define regression testing.
- j) What is software metric?

Q2) Attempt any FOUR of the following (out of FIVE) : [4 × 4 = 16]

- a) Explain V-V Model of testing in detail.
- b) Explain load and Smoke testing in detail.
- c) Explain any four testing principles in detail.
- d) Explain all testing principles in detail.
- e) Differentiate between alpha and beta testing.

P.T.O.

Q3) Attempt any FOUR of the following (out of FIVE) : [4 × 4 = 16]

- a) Explain Boundary-Value analysis in details.
- b) Explain GUI testing in details.
- c) Explain Sandwich and Big-Bang approach of Integration testing.
- d) Explain Software testing life cycle with diagram.
- e) Write difference between Static and Dynamic testing.

Q4) Attempt any FOUR of the following (out of FIVE) : [4 × 4 = 16]

- a) Explain test case design for the login process.
- b) Stub and Driver concept in Unit testing.
- c) Explain white box testing and its techniques.
- d) Explain Capability Maturity Model (CMM) in detail.
- e) Calculate the cyclometric complexity of a code which accepts 3 integer values and print the highest and lowest value.

Q5) Write a short note on Any TWO of the following (out of Three) :

[2 × 3 = 6]

- a) Rational Robot
- b) System testing
- c) Statement coverage criteria of White-Box testing



Total No. of Questions : 5]

SEAT No. :

P6022

[Total No. of Pages : 2

[6144]-603
T.Y.B.B.A. (C.A.)
CA - 603 : ADVANCED JAVA
(2019 Pattern) (Semester -VI)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicates full marks.*

Q1) Answer the following (any eight) :

[8×2=16]

- a) Write down 2 packages of JDBC API.
- b) What is yield () method?
- c) What is JDBC ?
- d) What is scriptlet tag?
- e) What is wait () and notify () in multithreading?
- f) What is Networking?
- g) What is Driver Manager class?
- h) What is ORM ?
- i) What is Session?
- j) What is the role of Prepared Statement?

Q2) Attempt any four of the following.

[4×4=16]

- a) Explain life cycle of servlet.
- b) Differentiate between statement and prepared statement.
- c) Explain Inter Thread communication in Multithreading.
- d) Explain JSP Architecture?
- e) Write a JDBC Program to Insert the record into patient table (Use prepared statement)

P.T.O.

Q3) Attempt any Four of the following. [4×4=16]

- a) Explain JDBC Drivers with a suitable diagram.
- b) Write the use of Inet Address class with suitable Example.
- c) Differentiate between JSP and Servlet.
- d) Write a JDBC program to delete the records of students whose names are starting with 'm' character.
- e) Write a JSP program to display all the prime numbers betⁿ 1 to n.

Q4) Attempt any four of the following. [4×4=16]

- a) What are the scripting Elements of JSP?
- b) What are the steps to connect to the database in Java.
- c) Explain do GET and do POST method.
- d) Write a JSP program to calculate the factorial of a given number.
- e) Write a Servlet program to display the details of employee in tabular format. Employee table structure (eno, ename, sal, design)

Q5) Write a short note on any two of the following. [2×3=6]

- a) Generic servlet and HTTP Servlet
- b) Cookies
- c) ResultSet Inter face



Total No. of Questions : 5]

SEAT No. :

P-6023

[Total No. of Pages : 2

[6144]-604

B.B.A. (CA)

CA - 604 : ANDROID PROGRAMMING

(2019 Pattern) (Semester-VI)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) *All questions are compulsory.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

Q1) Attempt any eight of the following.

[8 × 2 = 16]

- a) Define JDK.
- b) What is Activity?
- c) What is Intent?
- d) What is UI?
- e) What do you mean by Text view?
- f) What is SMS?
- g) What is Date Picker?
- h) What is thread?
- i) Define reverse yeocoding.
- j) Define SQLite Data base.

Q2) Attempt any four of the following.

[4 × 4 = 16]

- a) Explain basic building blocks of Android programming.
- b) Explain Android Application structure.
- c) What is cursor in SQLite? Explain with example.
- d) Explain Android UI controls (Any 4)
- e) Explain Android layout types in detail.

P.T.O.

Q3) Attempt any four of the following. **[4 × 4 = 16]**

- a) How to create an application in Android? Explain with suitable example.
- b) Enlist and explain the best features of Android.
- c) What is Android Emulator?
- d) Create a simple Application which send - Hello! Message from one activity to another with help of Button (Use Intent).
- e) Create a simple Application which demonstrate life cycle of Activity.

Q4) Attempt any four of the following: **[4 × 4 = 16]**

- a) Explain types of intent in detail with suitable example.
- b) Explain service life cycle in detail.
- c) What is list view? How to use it in Android application? Explain with suitable example.
- d) Create an Android Application to find the factorial of a number and display the result on Alert Box.
- e) Create an Android Application to accept two numbers and find power and average. Display the result on the next activity on Button click.

Q5) Write short note on any two of the following : **[2 × 3= 6]**

- a) Unbounded services.
- b) Android JSON.
- c) Adaptor



Total No. of Questions : 5]

SEAT No. :

P-6024

[Total No. of Pages : 2

[6144]-605
T.Y. B.B.A. (CA)
CA-604 : DOT NET FRAMEWORK
(2019 Pattern) (Semester - VI)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Figures to the right indicate full marks.*
- 3) Neat diagrams must be drawn whenever necessary.*

Q1) Attempt any Eight of the following (out of ten)

[8 × 2 = 16]

- a) What is IDE?
- b) What is CLS?
- c) Explain Timer control in vb.net?
- d) Explain JIT compilers?
- e) Explain class and object in C#?
- f) What is method overloading in C#?
- g) Explain ADO.net?
- h) Explain the Range validator?
- i) What is ASP. NET?
- j) Enlist any Two Form control in VB.net?

Q2) Attempt any Four of the following (out of Five)

[4 × 4 = 16]

- a) What is control Structures? Discuss any two control structure.
- b) Explain components of .NET framework.
- c) Explain Inheritance with example?
- d) Explain Server control
- e) Explain command object?

P.T.O.

Q3) Attempt any Four of the following (out of Five) [4 × 4 = 16]

- a) Write a VB.net program for blinking an image.
- b) Write a program in C# swapping of two number.
- c) Design a VB.net form to pick a date from Date Time Picker control and display day, month and year in separate text boxes.
- d) Write a vb.net program to check whether Enter string is Palindrome or not.
- e) Write a C#.net application to display the vowels from a given string.

Q4) Attempt any Four of the following (out of Five) [4 × 4 = 16]

- a) What is constructors? Explain with suitable Example?
- b) Explain connection object and command object?
- c) Write a C# program to find area of circle.
- d) Write a vb.net program to move the text "Pune university" continuously from left to right.
- e) Write a C# program to accept and display 'n' student's details such as Roll No, Name, marks in three subject using class. Display percentage of each student.

Q5) Write a short note on Any Two of the following (out of Three) [2 × 3 = 6]

- a) Event Driven Programming.
- b) Explain object oriented concept in C#.
- c) Validation control in ASP. net.

