

Total No. of Questions : 5]

SEAT No. :

PB1466

[6226]-401

[Total No. of Pages : 2

S.Y.B.B.A.

COMPUTER APPLICATION

CA - 401 : Networking

(2019 Pattern) (CBCS) (Semester - IV)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

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

Q1) Attempt any eight of the following:

[8×2=16]

- a) Write name of addresses used in TCP/IP protocol.
- b) Define Computer Network.
- c) What are the types of transmission media?
- d) What is wireless LAN?
- e) Define HUB.
- f) What is encryption?
- g) What is need for network security?
- h) Define Intranet.
- i) What is bridge?
- j) What are the two types of standards?

Q2) Attempt any four of the following.

[4×4=16]

- a) Difference between connection oriented and connectionless network models.
- b) Explain TCP/IP protocol in details.
- c) Define unguided media. Explain any one in detail.
- d) Describe the frame format and physical layer of ethernet.
- e) What is cryptography? Explain symmetric key cryptography.

P.T.O.

Q3) Attempt any four of the following.

[4×4=16]

- a) Explain types of security services.
- b) Define ISO/OSI reference model. Explain any one layer in detail.
- c) Difference between twisted pair cable and coaxial cable.
- d) Define network topology? Explain any one in detail.
- e) What is wireless transmission? Explain any two media in details.

Q4) Attempt any four of the following.

[4×4=16]

- a) What are the network connectivity devices? Explain any one in detail.
- b) Explain communication modes in details.
- c) Comparison between server based LAN and peer to peer LAN.
- d) What is copyright? Explain its application.
- e) Explain classfull addressing in details.

Q5) Write short note on : any two.

[2×3=6]

- a) Propagation modes.
- b) Intranet and Extranet.
- c) Firewall.



Total No. of Questions : 5]

SEAT No. :

PB-1467

[Total No. of Pages : 3

[6226]-402

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

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

(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) Attempt any eight of the following (out of Ten) :

[8 × 2 = 16]

- a) Define Encapsulation.
- b) What is inline function?
- c) What is Class? Give its syntax.
- d) What is Constructor?
- e) Explain any two use of Scope Resolution operator.
- f) List the operators which cannot be overloaded?
- g) What is virtual function?
- h) What is stream?
- i) Explain get () and put () function.
- j) What are the access specifiers used in C++.

Q2) Attempt any four of the following. (out of five) :

[4 × 4 = 16]

- a) Explain Memory management operators in detail.
- b) What is friend function? Explain with an example?
- c) Explain array of object in C++ with example.
- d) Explain the different types of Inheritance with example.
- e) List different types of constructor. Explain any one constructor with example.

P.T.O.

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

- a) Write a C++ program to find the maximum of two integer numbers using inline function.
- b) Write a C++ program to find the area of circle and area of triangle using function overloading.
- c) Write a C++ program to swap the values using call by reference method.
- d) Write a C++ program to create a class employee which contains data members as e_id, e_name, e_Salary. Write member functions to accept and display employee information, also display information of employee having maximum salary.
- e) Write a C++ Program to overload unary ++ operator.

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

- a) What is Template? Explain its types in detail.
- b) Explain file opening methods in C++ with syntax.
- c) Explain the types of polymorphism in detail.
- d) Write a C++ program to calculate the Simple Interest. (Use default value for rate)
- e) What is the output of the following program? (Assume there are no syntax errors)

```
#include <iostream.h>
void stat( )
{
    int m = 0;
    static int n = 0;
    m++;
    n++;
    cout<<m<< " "<<n<< "\n";
}
void main( )
{
    stat( );
    stat( );
    getch ( );
}
```

Q5) Write a Short notes any two of the following. (out of Three) : **[2 × 3 = 6]**

- a) Manipulators in C++.
- b) Exception Handling.
- c) 'this' pointer.



Total No. of Questions : 5]

SEAT No. :

PB-1468

[Total No. of Pages : 2

[6226]-403

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

CA - 403 : OPERATING SYSTEM

(2019 Pattern) (CBCS) (Semester - IV)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer all questions.*
- 2) Figures to the right side indicate full marks.*

Q1) Attempt any eight of the following :

[8 × 2 = 16]

- a) Write any two services provided by OS.
- b) What is meant by System Call?
- c) What is process?
- d) Define a safe state?
- e) Define Dispatcher.
- f) What is semaphores?
- g) What do you mean by Rollback?
- h) What is meant by Address Binding?
- i) List various operation on File.
- j) What do you mean by Deadlock?

Q2) Attempt any four of the following :

[4 × 4 = 16]

- a) Explain Operating System Structure.
- b) Explain 'Dining Philosopher' Synchronization problem.
- c) Explain different method for recovery from a deadlock.
- d) What is Fragmentation? Explain types of fragmentation in details.
- e) List and explain system calls related to Process and Job control.

P.T.O.

Q3) Attempt any four of the following :

[4 × 4 = 16]

- a) State and explain Critical Section Problem.
- b) Explain different methods for recovery from deadlock.
- c) State and explain Critical Section Problem.
- d) Calculate average turn around time and average waiting time for all set of processes using FCFS algorithm.

Processes	Burst Time	Arrival Time
P ₁	5	1
P ₂	6	0
P ₃	2	2
P ₄	4	0

- e) Consider the following page reference string :

4, 6, 7, 8, 4, 6, 9, 6, 7, 8, 4, 6, 7, 9.

The number of Frames is 3. Show page trace and calculate page Fault for the following page replacement schemes.

- i) FIFO
- ii) LRU

Q4) Attempt any four of the following :

[4 × 4 = 16]

- a) What is meant by Shortest Seek Time First? Explain in details.
- b) Define the terms :
 - i) Logical Address
 - ii) Physical Address
- c) Explain Resource Allocation Graph in detail.
- d) What are the difference between Preemptive and Non-Preemptive Scheduling?
- e) Assume there are total 0-199 tracks that are present on each surface of the disk. If request queue is 68, 172, 4, 178, 130, 40, 118 and 136 initial position of the head is 25. Apply FCFS disk scheduling algorithm & calculate total head Movement.

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

[2 × 3 = 6]

- a) Write a note on interrupts.
- b) Explain semaphores and its types in detail.
- c) Write Short note on fragmentation.



Total No. of Questions : 5]

SEAT No. :

PB-1469

[Total No. of Pages : 2

[6226]-404

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

CA - 404 : NODE JS

(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.*

Q1) Answer the following (Any EIGHT) :

[8 × 2 = 16]

- a) What are the components of NPM?
- b) Write the syntax to read a file asynchronously in Node.js using the fs module.
- c) Explain the syntax for configuring a database connection in a Node.js application.
- d) What is NodeJS?
- e) What is REPL?
- f) Define Anonymous function
- g) What are the features of Node Js?
- h) Write about arrow function.
- i) What are the types of streams in NodeJs?
- j) What is a module? List its types

Q2) Answer the following (Any Four) :

[4 × 4 = 16]

- a) Write a program in Node Js to create a Historical Place portal
- b) Write a Node.js program that updates the marks of a given student Rno in “student” table and displays the result.
- c) What is the purpose of module.exports in node.js?
- d) Explain difference between AngularJS and NodeJS
- e) What is a listener? Explain function requestListener() with suitable examples.

P.T.O

Q3) Answer the following (Any Four) :

[4 × 4 = 16]

- a) Explain the traditional web server model in detail? List its limitations
- b) Write a NodeJS program which will convert the output “SY BBA - CA” into upper - case and lower - case.
- c) What is a file System? Explain different operations performed on files.
- d) What is the event explained in detail? Explain any two methods of event in detail.
- e) Write a Node.js program to write data to file in synchronous and asynchronous modes.

Q4) Answer the following (Any Four) :

[4 × 4 = 16]

- a) Write a NodeJS Program to create a customer DB and account table (cid, name, balance) in mysql.
- b) Write a code to perform the following operations on Buffer data – Concat, slice, compare.
- c) What is the package in NodeJS? Explain with example.
- d) Write a NodeJS program to search a given word in a file and display the result to Console.
- e) What are dependencies and devDependencies in package.json file?

Q5) Answer the following (Any Two) :

[2 × 3 = 6]

- a) Explain web server in detail.
- b) What is the difference between blocking and Non-blocking?
- c) Explain the usage of a buffer class in Node.js?



Total No. of Questions : 5]

SEAT No. :

PB-1470

[Total No. of Pages : 2

[6226]-405

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

**CA - 404 : ADVANCE PHP
(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 wherever necessary.*
- 3) Figures to the right indicate full marks.*

Q1) Attempt any EIGHT of the following.

[8 × 2 = 16]

- a) What is web service?
- b) What is class?
- c) What is serialization?
- d) What is Ajax Script?
- e) What is \$_REQUEST variable?
- f) What is XML?
- g) State purpose of final keyword?
- h) What is \$_SERVER variable?
- i) Enlist XML elements?
- j) What is content management system?

Q2) Attempt any four of the following.

[4 × 4 = 16]

- a) Explain class & object with example.
- b) What is DOM in PHP?
- c) What is SOAP? Explain in detail?
- d) Write difference between GET & POST method.
- e) Write a PHP program which implement AJAX for addition of two number.

P.T.O