Total No. of Questions : 5]

SEAT No. : ____

PA-1973

[Total No. of Pages : 2

[5954]-401
S.Y. B.B.A. (C.A.)
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 three of the following :** **[3 × 5 = 15]**

a) Define Network Topology? Explain different types of topologies.

b) Explain function of each layer of ISO-OSI reference Model.

c) What is wireless transmission? Explain any two media in detail.

d) Define the bridge? Explain the types of bridge.

Q2) **Attempt any three of the following :** **[3 × 5 = 15]**

a) Define Computer Network? Explain goals of Computer Network.

b) Explain different types of Addresses.

c) Explain propagation methods in detail.

d) Explain Firewall and its Security Features.

Q3) **Attempt any three of the following :** **[3 × 5 = 15]**

a) Draw TCP/IP model and state the function of each layer.

b) Compare connection oriented and connectionless services.

c) What is Router? Explain its components.

d) What is Ethernet? What are it's types? Explain any one in detail.

P.T.O.

Q4) **Attempt any three of the following :** **[3 × 5 = 15]**

a) Explain IEEE standards 802-11 in detail.

b) Compare ISO-OSI reference model and TCP/IP model.

c) What is cryptography? Explain encryption and decryption process.

d) Explain Fiber optic cable in detail.

Q5) **Write notes on (Any Two) :** **[2 × 5 = 10]**

a) Modes of Communication.

b) Bluetooth Architecture.

c) MAC sublayer with it's Frame Format.

d) Copyright.

Total No. of Questions : 5] **SEAT No. :**

PA-1974 **[Total No. of Pages : 3**

[5954]-402
S.Y. B.B.A. (Computer Application)
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). **[2×8=16]**

a) What is Encapsulation?

b) Define the following terms

i) Early Binding

ii) Late Binding

c) What is Inline function?

d) Explain get() and put () function.

e) What is stream?

f) Define Friend function.

g) Explain the use of new opreator, state the syntax.

h) State the need of virtual keyword.

i) State user defined data types in C++.

j) Explain the use of Scope Resolution operator.

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

a) List different types of constructor. Explain any one constructor with example.

b) What is function overloading? Explain with suitable example.

c) Describe different types of inheritance.

d) Explain virtual base class with suitable diagram.

e) Describe file manipulators with their syntaxes.

P.T.O.

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

a) Write a C++ program to copy contents of one file to another file.

b) Write a program to calculate area and circumference of a circle using inline function.

c) Declare a class of vehicle. Derived classes are two whecler, three wheeler and four wheeler. Display the properties of each type of vehicle using member functions of class.

d) Write a C++ program to use setfile ( ) and setiosflags ( ) manipulator.

e) Write a C++ program to compare two strings using overload operater "==".

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

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

```
# include <iostream.h>
 int i, j;
 Class sample
{
 Public:
        Sample (int a = 0, int b = 0)
        {
                i = a;
                j = b;
                show ( );
        }
        Void show ( )
        {
        Cout <<j <<" ";
        }
        };
        Void main ( )
        {
                Sample (5, 10);
                Int & x = i;
                int & y = j;

                i++;

        Cout << x - - << " " << ++y;

        }
```

b) Explain try, catch and throw in exception handling.

c) Design C++ class which contain function display ( ). Write a program to count number of times display ( ) function is called (Use static data member)

d) What is Destructor? State the importance of destructor with example.

e) What is tokens in C++? Explain in detail.

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

a) Call - by - value and call-by-reference

b) Data abstraction

c) Default Argument

Total No. of Questions : 5] **SEAT No. :**

PA-1975 **[Total No. of Pages : 3**

[5954]-403
S.Y. B.B.A. (Computer Application)
CA - 403 : OPERATING SYSTEM
(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.***

Q1) Attempt any Eight of the following. **[2×8=16]**

a) Define the term operating system.

b) Define system program.

c) Which scheduler controls the degree of multiprogramming?

d) What is Turn-Around Time?

e) What is meant by Deadlock?

f) What is demand paging?

g) List any four attributes of files.

h) What do you mean by seek Time in Disk Scheduling.

i) What does FIFO and MFU stand for?

j) Define Rollback?

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

a) List and explain services provided by the operating system.

b) Explain Process Control Block (PCB) with diagram.

c) Explain 'Dining Philosopher' Synchronization problem.

d) What is Frogmentation? Explain types of its in detail.

e) Describe I/O Hardware with its type of I/O devices.

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

a) Explain various types of system programs.

b) Explain Indexed Allocation in detail.

P.T.O.

c) The request queue is as follows:

15, 27, 137, 18, 150, 65, 194.

Number of tracks = 0 to 199

Starting position or current head position = 128. Find total head movement by applying SSTF (Shortest Seek Time First) disk scheduling algorithm.

d) List any two types of Multiprocessor.

e) Consider the following set of processes with length of CPU Burst time and arrival time in milliseconds.

Process	Arrival	Time Burst Time
P_1	0	3
P_2	2	6
P_3	4	4
P_4	6	5
P_5	8	2

Calculate turn around time, waiting time, average waiting time and average turn around time using preemptive SJF scheduling algorithm.

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

a) Consider the following snapshot of the system.

Process	Allocation				Max				Avaliable			
	A	B	C	D	A	B	C	D	A	B	C	D
P_0	0	0	1	2	0	0	1	2	1	5	2	0
P_1	1	0	0	0	1	7	5	0				
P_2	1	3	5	4	2	3	5	6				
P_3	0	6	3	2	0	6	5	2				
P_4	0	0	1	4	0	6	5	6				

Is the system safe? Justify?

If yes give safe sequence

b) Explain different methods for recovery from deadlock?

c) Consider a reference string 4, 7, 6, 1, 7, 6, 1, 2, 7, 2 the number of frames in the memory is 3. Find out number of page Faults respective to

i) FIFO

ii) LRU

d) Explain advantages and disadvantages of linked allocation methods.

e) Define the term:

i) Logical Address

ii) Physical Address

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

a) What is Interrupts.

b) What is medium term scheduler.

c) Explain semaphores and its types in detail.

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Total No. of Questions: 5]

SEAT No. :

PA-1976

[Total No. of Pages : 2

[5954]-404
SY B.B.A. (C.A.)
CA - 404 : NODE JS
(2019 Pattern) (Semester-IV)

Time : 2 ½Hours] ***[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 (NPM)? write it's syntax.

b) What is REPL?

c) List any four core modules of node. JS.

d) List any two methods included under path module of node. JS.

e) For which tasks a File System module is used for?

f) Write a command to add dependency "express" using NPM.

g) Write a command to install MYSOL Package by using NPM.

h) Write down steps to handle http requests while creating web server using node. JS.

i) Write any two advantages of node. JS.

j) Write any two functions of Buffer used in node. JS.

Q2) Answer the following (any Four) **[4×4=16]**

a) Write a Program to update table records using node. JS and MySQL database.

b) Explain Node.JS Process Model with the help of diagram.

c) How does Node.JS handles a file request.

d) What is the Purpose of object module experts in node.JS?

e) Explain LC. readfile () method for all Possible ralves of options?

P.T.O.

Q3) Answer the following (any four) **[4×4=16]**

a) Write a Program which uses addlistener ( ) method of Event Emmitter class.

b) Write a short note on NPM.

c) Write a Program to delete table records using node.JS and MySQL database.

d) How do you install Packages locally using NPM. Explain with an example.

e) Compare Traditional web. server model and Node.JS Process model.

Q4) Answer the following (any four) **[4×4=16]**

a) Write a Program to use SoL SELECT very to show data from a table using node. JS and MySoL database.

b) Explain steps to install Node.JS on windows.

c) Write a Program to write to a file in node.JS

d) How to add dependency into Package JS on?

e) Write a Program to calcolate factorial of given number using function.

Q5) Answer the following (any two) **[2×3=6]**

a) Explain the meaning, purpose, steps to execute and output of below program:

```
var http = require ('http');
http. create server (function (req, res){
res. write head (200, {'content - Type' : 'text/htm' });
res. end ('Hello world');
}) listen (8080);
```

b) Explain working of writeHead ( )

c) Explain Inheriting events with suitable example.

Total No. of Questions : 4]

SEAT No. : ____

PA-1977

[Total No. of Pages : 2

[5954]-405

S.Y.B.B.A. (CA)

CA-404 : ADVANCED PHP

(2019 CBCS Pattern) (Semester - IV)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***All questons are compulsory.***
2) ***Draw neat diagram wherever necessary.***

Q1) Attempt any Eight of the following. **[8×2=16]**

a) State the purpose of Extend Keyword.

b) What is Class?

c) What is $_ REQUEST variable?

d) What is Serialization?

e) What is Document object Model in PHP?

f) Describe any two content management system software.

g) What is $_ SERVER variable?

h) State the purpose of Final Keyword?

i) What is meaning of Self Processing form?

j) What is AJAX Script?

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

a) Explain features of Joomal/Drupal.

b) What is SOAP? Explain in detail.

c) Explain XML MVC framework.

d) Difference between GET and POST method.

e) How to create object in PHP? Explain with example.

e) Write a simple PHP program which implements AJAX for addition of two numbers.s

P.T.O.

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

a) Create a form to accept Customers Details and Display it on Next Page.

b) Write a PHP script to Design a form to accept a number from the user to check whether number is palindrome or not. (Use the concept of self processing page).

c) Write XML script to print the names of the students present in "Student.xml" file.

d) Define a class Employee having private member id, name, salary, dept. Define parametrised constructor. Create object and display details fo employee having maximum salary.

e) Write a simple PHP program which implements AJAX for addition of two numbers.s

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

a) Explain the structure of WSDL.

b) Explain XML Parser.

c) Write a PHP script to display server information in table format (Use $_ SERVER).

d) What are the advantages of AJAX?

e) Write a PHP Script to read book. XML and print book details in tabular format using simple XML. (Content of book. XML are (bookcode, bookname, author, year, price).

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

a) Web services communication models.

b) Sticky Forms.

c) Encapsulation.

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