Total No. of Questions : 7]

**PB3019** 

### [6255]-101

# First Year M.Sc. (Computer Science) **CS-501-MJ: ADVANCED OPERATING SYSTEM** (2023 Credit Pattern) (Semester-I)

Time : 3 Hours]

Instructions to the candidates:

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

Q1) Solve any 5 of the following.

- a) Define interrupt.
- Differentiate named and unnamed pipe. b)
- What are the content of buffer header? c)
- What is signal? State features of signal? d)
- Justify "In linux the files are usually accessed via filenames". e)
- What is hard link? f)

*Q2*) Attempt the following.

- State and explain setjump() and longjump() functions. [4] a) i)
  - ii) What is an orphan process? Write down the sequence of events that should occur for a process to become orphan. [3]
- Explain demand paging memory management mechanism with the data b) structures used by it. [5]

[Total No. of Pages : 3

**SEAT No. :** 

[5×2=10]

[Max. Marks : 70

*Q3*) Attempt the following.

a)	i)	How does the command mkdir work?	[4]
	ii)	Explain the behavior of following C program.	[3]
		<pre>#include <fcntl.h></fcntl.h></pre>	
		char string = "hello";	
		main(argc, argv)	
		int argc;	
		char * argv[];	
		{	
		int fd;	
		char buf [256];	
		mknod("fifo",010777,0);	
		if (argc==2)	
		fd= open("fifo", O_WRONLY);	
		else	
		fd= open("fifo", O_RDONLY);	
		for (;;)	
		if (argc==2)	
		write(fd, string, 6);	
		else	
		read(fd, buf, 6);	
		}	

b) Explain scenario of "delayed write buffer" with suitable diagram. [5]

## *Q4*) Attempt the following.

a)	i)	Explain getcwd () system call with example.	
	ii)	Write short note on dup() and dup2() system call.	[3]

b) Explain advantages & disadvantages of mmap (). [5] **Q5**) Attempt the following.

~			0	
	a)	i)	Explain process and its states with help of diagram.	[4]
		ii)	Write a program that will read data from one file and will copy in	ito
			another file.	[3]
	b)	Wha	at is race condition? Explain any one scenario in which race conditi	on
		οςςι	irs.	[5]
<b>Q6</b> )	Atte	mpt t	he following.	

- a) i) Write a program to demonstrate the use of calloc(), free() system calls?
  - Write a short note on swapping concept. [3] ii)

[4]

[5]

- Define the following concepts: **b**)
  - Fork i)
  - Pipe ii)
  - iii) Shell
  - iv) inode
  - super block v)

#### *Q7*) Attempt the following.

- What is data segment? How to manage it? [3] ii)
- Write a C program to handle the two-way communication between the b) parent & child using pipe. [5]



Total No. of Questions : 6]

**PB-3020** 

SEAT No. :

[Total No. of Pages : 3

# [6255]-102

# M.Sc.

# COMPUTER SCIENCE CS-502-MJ: Artificial Intelligence (2023 Pattern) (Semester - I)

Time	2:31	Hours]	[Max. Marks : 70
Instr	1)	All question are compulsory.	
	2)	Figures to the right indicate full marks.	
<b>Q1</b> )	Sol	ve Six of the Following :	$[6 \times 2 = 12]$
	a)	Define Artificial Intelligence?	
	b)	What is Production System?	
	c)	What is FOPL?	
	d)	Define the heuristic search.	
	e)	What is Explainable AI?	
	f)	What do you mean by Agent?	
	g)	What is Hierarchical Planning	
Q2)	Atte	empt any four of the following :	[12]
	a)	Explain generate and test heuristic algorithm?	
	b)	Write the characteristics of Intelligent Agents.	
	c)	Write the benefit of Artificial intelligence.	
	d)	Explain Constraint satisfaction algorithm?	
	e)	Construct the truth table for	
		i) $p \lor q \sim q \rightarrow p$ ii) $(\sim (p \land q) \lor r) \rightarrow \sim p$	

- Q3) Attempt any three of the following.
  - a) Explain Mean end analysis algorithm?
  - b) Difference between predicate and propositional logic?
  - c) Difference between Breadth First and Depth First Search algorithm.
  - d) Explain Optimal Decisions in Games?
- Q4) Attempt any three of the following.
  - a) Difference between Forward Chaining and Backward Chaining.
  - b) Explain AO\* algorithm with a suitable example.
  - c) Explain Alpha Beta pruning algorithm with example?
  - d) Explain the Best first search.

*Q5*) Attempt the following :

- a) Solve any two
  - i) Explain IDDFS algorithm?
  - ii) Explain A\*algorithin with a suitable example.

#### OR

Give symbolic form of following statements (predicate logic)

- I) Some men are genius.
- II) For every x, there exists a y such that  $x^2 + y^2 >= 100$
- III) Given any positive integer, there is greater positive integer
- IV) Everyone who like fun will enjoy each of these plays.
- V) Some students are clever.
- iii) Let p. He is intelligent and q: He is tall be two propositions. Write each of the Following statement in symbolic form using p and q:
  - I) He is tall but not intelligent.
  - II) He is neither tall nor intelligent.
  - III) He is intelligent or he is tall.
  - IV) It is not true that he is intelligent or tall.
  - V) It is not true that he is not tall or not intelligent.
- b) Explain Games theory in Artificial Intelligent.  $[1 \times 2 = 2]$

# [6255]-102

[12]

[12]

# [12]

 $[2 \times 5 = 10]$ 

- *Q6*) Attempt any two of the following.
  - a) Explain the Application of AI in different domain?
  - b) How to define a problem as state space search? Discuss it with the help of water jug example.
  - c) Solve the following Crypt arithmetic problem using constraints satisfaction search procedure.

SEND +MORE=MONEY

General Rules:

- i) Each alphabet takes only one number from 0 to 9 uniquely.
- ii) Two single digit numbers sum can be maximum 19 with carryover. So carry over in problems of two number additions is always 1.



[6255]-102

**PB-3021** 

[Total No. of Pages : 2

[Max. Marks : 35]

 $[5 \times 1 = 5]$ 

[4 + 4 + 2 = 10]

[4]

**SEAT No. :** 

# [6255]-103

# M.Sc. (Computer Science) CS - 503 - MJ : PRINCIPLES OF PROGRAMMING LANGUAGES

## (2023 Pattern) (Semester - I) (Paper - I)

*Time : 2 Hours]* 

Instructions to the candidates :

- 1) Q.1 is compulsory.
- 2) Solve any Three questions from Q.2 to Q.5.

#### Q1) Attempt any Five of the following :

- a) What is imperative type of language? Name any 2 languages which are imperative?
- b) What is Heterogeneous array?
- c) What data Encapsulation concept is in object oriented programming?
- d) What is Method overloading?
- e) What is the use of strlen() function. Give Syntax.
- f) What is dynamic binding?

### **Q2**) Attempt the following :

- a) Explain the Entry controlled & exit controlled loops. [4]
- b) What is Heap Based Allocation.
- c) What will be output of following code? Justify. [2] main()

```
{
int a=2, b=3;
fun (&a, &b);
printf("%d %d",a,b);
}
void fun(int *p, int *q)
{
 *p=*p+2;
 *q=*p**q;
}
```

*P.T.O*.

## [6255]-103

#### 2

#### Q3) Attempt the following :

- a) What is Multilevel Inheritance? Explain in detail the implementation of multilevel inheritance. [4]
- b) What are the ways to implement parameter passing method? Explain in detail the use of parameter passing methods in various programming languages. [4]
- c) Explain the short circuit Evaluation with example.

## **Q4**) Attempt the following :

- a) Explain the array slice & jagged array with example.
- b) What is a dangling pointer? Explain solutions to the dangling pointer problem? [4]
- c) Give difference between enum& union.

#### Q5) Attempt the following :

- a) What so you understand by the terms 'semantics of a call' and 'semantics of a return' in case of simple subprogram? What do you mean by the activation record and activation record instance. [5]
- b) What is Generic subroutines? Explain Generic methods in JAVA. [5]

## $\nabla \nabla \nabla \nabla$

#### [4 + 4 + 2 = 10]

[4 + 4 + 2 = 10]

[2]

[4]

[2]

[5 + 5 = 10]

# **PB3022**

SEAT No. :

[Total No. of Pages : 2

# [6255]-104

## First Year M.Sc. COMPUTER SCIENCE

# CS-510-MJ : Advance Data Bases and Web Technologies (2023 Credit Pattern) (Semester - I)

Time	:2	Hours] [Max. Marks	: 35
Instr	uctio 1) 2) 3)	ons to the candidates: Question 1 is compulsory. Solve any three questions from Q.2 to Q.5. Questions from 2 to 5 carry equatl marks.	
<b>Q1</b> )	So	olve any five of the following.	[5]
	a)	What is key value data store?	
	b)	What is NoSQL?	
	c)	Explian < figcaption > element of HTML5	
	d)	What is 2D transformation.	
	e)	State any two selectors of CSS3.	
	f)	What is Bootstrap?	
Q2)	At	tempt the following.	[10]
	a)	i) What is Graph database?	[2]
		ii) Explain any 4 semantic elements of HTML 5 with example.	[4]
	b)	What is scrollspy plugin? Explain with example.	[4]
Q3)	At	tempt the following.	[10]
	a)	i) What is namespace in MongoDB?	[2]
		ii) Write the difference between NoSQL & RDBMS.	[4]
	b)	Explain Transition property in CSS3.	[4]
Q4)	At	tempt any follwing.	[10]
	a)	i) What are alternative to MongoDB?	[2]
		ii) Design HTML5 page using CSS which display following naiga Bar	ution [ <b>4</b> ]
		Home Java HTML CSS3	
	b)	How do you use Glyphicons in bootstrap?	[4]

Q5) Attempt any two of the following

a)	<ul> <li>Create employee collection with following fields Employee (eno,enar salary, designation, Dept: {deptno, dname, Location}, Proiect: {Pnar HRs})</li> <li>i) Display all employee whose salary &gt; 20,000</li> </ul>			
	ii)	Display all employee details whose name start with'p		
	iii)	Update employee name where eno is 11.		
	iv)	Sort the pname in tescenting order.		
	v)	Update the location from pune to Mumbai.		
b)	Exp	plain following form attribute	[5]	
	i)	Autocomplete		
	ii)	Form		
	iii)	Formenctype		
	iv)	Formaction		
	v)	Autofocus		
c)	Exp	plain advantages and disadvantages of Bootstrap.	[5]	

\$ \$ \$

Total No. of Questions : 5]

# PB3023

SEAT No. :

[Total No. of Pages : 2

## [6255]-105

## First Year M.Sc.

# **COMPUTER SCIENCE**

# **CS-512-MJ : Cloud Computing**

# (2023 Credit Pattern) (Semester - I)

Time : 2 Hours] [Max.				
Instr	ucti	ons to	the candidates:	
	<i>1</i> )	Quest	ion 1 is compulsory	
	2)	Solve	any 3 questions from Q.2 to Q.5.	
	3)	Quest	ions 2 to 5 carry equal marks.	
		_		
<b>Q1</b> )	So	lve an	y five of the following :	[5]
	a)	Wh	at is cloud computing?	
	b)	Wh	at is Virtual Cluster?	
	c)	Wh	at is cloud Burst?	
	d)	Wh	at is Hypervisor?	
	e)	Wh	at is Data security in cloud computing?	
	f)	Giv	e any two names of AWS clients.	
Q2)	Att	tempt	the following :	[10]
	a)	i)	What is multitenancy.	[2]
		ii)	Explain the deployment models of cloud computing.	[4]
	b)	Wri	te note on programming support for Google App Engi	ne. <b>[4]</b>

Q3)	Atte	mpt tl	he following :	[10]
	a)	i)	What are the cloud security Risk.	[2]
		ii)	What is Identity Management & Access control.	[4]
	b)	Wha	t is virtualization & give its types.	[4]
Q4)	Atte	mpt tl	he following :	[10]
	a)	i)	Explain cloud enabling technologies.	[2]
		ii)	Explain programming on microsoft Azure.	[4]
	b)	Wha	t is Disaster recovery in clouds.	[4]
Q5)	Atte	mpt a	ny two of the following :	[10]
	a)	Wha	t are the cloud Computing Applications.	[5]
	b)	Wha	t is the Hypervisor & Explain its types.	[5]
	c)	Wha	t is the need of cloud computing.	[5]

x x x

## **PB3024**

[6255]-106

# First Year M.Sc.(Computer Science) CS-514-MJ: C#.NET PROGRAMMING

(Credit 2023 Pattern) (Semester - I)

*Time : 2 Hours*] Instructions to the candidates:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- Neat diagrams must be drawn wherever necessary. 3)
- *Q1*) Solve any six of the following.
  - What do you mean by MDI. a)
  - What do you mean by overriding of a function in the same class in C#. b)
  - Define: Abstract Class? c)
  - What is JIT? d)
  - Define: Delegates. e)
  - f) What is Namespace?
  - What is the use of Boxing? **g**)

**Q2**) Attempt any three.

- a) Explain CTS.
- Explain CheckBox with its properties. b)
- What are 'Anchor' and 'Dock' properties? c)
- d) Explain Timer Control.

**Q3**) Attempt any two.

- Elaborate Features of .Net. a)
- Write a program of creating file by using FileStream class. b)
- Write a string data type with example in C#. c)

*P.T.O.* 

[Total No. of Pages : 2

**SEAT No. :** 

[Max. Marks: 35

[6]

[6]

[6]

- Q4) Attempt any two.
  - a) Write note on assembly?
  - b) Define implicit conversion with example.
  - c) Write note on control statements in C# with example.
- *Q5*) Attempt the following.

**Q6**)

a) Solve any one.		ve any one.	[4]	
	i)	Elaborate classes in C# with program example.		
	ii)	How connected data architecture is implemented in ADO. N Explain with sample C# code.	NET.	
b)	Writ	te note on array in detail with example.	[2]	
Atte	mpt a	any one.	[5]	
a)	Write a program for selection of Dadie Dutton			

- a) Write a program for selection of Radio Button.
- b) Write a C# program to list files in a directory.

 $\phi \phi \phi$ 

Total No. of Questions : 6]

**PB-3025** 

SEAT No. :

[Total No. of Pages : 2

## [6255]-107

## M.Sc.

# COMPUTER SCIENCE CS-531 RM : Research Methodology (2023 Pattern) (Semester - I)

Time : 3 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.

<b>Q1</b> )	Solve any Six of the following :		
	a)	Define Research Methods.	
	b)	What is research problem?	
	c)	Write about pure and applied research?	
	d)	What is Sampling?	
	e)	Define dispersion.	
	f)	State different steps in writing report.	
	g)	What do you mean by publication misconduct?	
Q2)	Att	tempt any Four of the following :	[12]
	a)	Write objectives of research.	
	b)	What are purposes of Literature Review?	
	c)	State features of research design.	
	d)	Write advantages and disadvantages or sampling.	
	e)	What precautions need to be take in Interpretation?	

#### a) Solve any two of the following.

Q5) Attempt the following :

- i) Differentiate between research methods and research methodology.
- ii) Define hypothesis. List types of hypothesis and explain sources of hypothesis.
- iii) Write short note on qualitative and quantitative data analysis tools.
- b) What is publication ethics?

#### Q6) Write note on the following : (Any Two) [10]

- a) Collection of primary data.
- b) Exploratory or formulative research.
- c) E-resources for research.

### жжж

# **Q3**) Attempt any three of the following :

- a) Write short note on Scientific methods.
- b) What is the necessity of defining research problem?
- c) Explain action research with an example.
- d) What precautions need to take while writing research reports?

#### Q4) Attempt any three of the following : [12]

- a) Explain open access publications and initiatives.
- b) Write short note on measure of central tendency,
- c) Explain different types of plagiarisms.
- d) Explain research process with diagram.

# [10]

[2]

## **PB3026**

#### [6255]-201

## First Year M.Sc.

#### **COMPUTER SCIENCE**

## CS-551 - MJ : Design and Analysis of Algorithms (2023 Credit Pattern) (Semester - II)

Time : 3 Hours]

Instructions to the candidates:

- All questions are compulsory. 1)
- Neat diagrams must be drawn wherever necessary. 2)
- Use of single memory non programmable scientific calculator is allowed. 3)

*Q1*) Solve any five of the following.

- Define time complexity. List asymptotic notations. a)
- Merge sort is in place algorithms. Justify. b)
- Consider 4 programs with the length 14, 5, 20, 8, 3 respectively are to be c) stored on a computer tape. Find MRT using greedy method.
- d) What is negative weighted cycle? Does Flyod Warshall algorithm consider the negative weighted cycle?
- What do you mean by branch and bound? Where this technique might be e) useful.
- Define P & NP class problem. f)

*Q2*) Attempt any two questions.

- What is Divide & Conquer strategy? Explain Binary Search algorithm a) and State worst time complexity.
- Find optimal solution using Knapsack instances n = 7 m = 15b) (P1, P2, P3, P4, P5, P6, P7) - (10, 5, 15, 7, 6, 18, 3) (W1, W2, W3, W4, W5, W6, W7) = (2, 3, 5, 7, 1, 4, 1) (Use Greedy method)
- Apply the Flyod Warshall algorithm to find length of shortest paths. c)



[Total No. of Pages : 3

[Max. Marks : 70

SEAT No. :

 $[5 \times 2 = 10]$ 

[2×6=12]

- Q3) Attempt any two questions.
  - a) Apply the Merge Sort to sort the following numbers. Derive its Time complexity.
     26 5 37 1 61 11 50 15 48 10
    - 26, 5, 37, 1, 61, 11, 59, 15, 48, 19.
  - b) What is the best way to multiply a chain of matrices A1, A2, A3, A4 with dimensions 15×5, 5×10, 10×20, 20×25 respectively using Dynamic Programming?
  - c) Find shortest path for all vertices by using Dijkstra's Algorithm.



*Q4*) Attempt any two questions.

[2×6=12]

a) Define DFS & BFS. Illustrate on the following Graph. (Start Vertex - 1)



b) Find all possible Hamiltonian Cycles for the following Graph.



c) What is longest common subsequence problem. Find the LCS of X & Y X = < A, B, C, B, D, A, B > and Y = < B, D, C, A, B, A>

[6255]-201

[2×6=12]

- **Q5)** Attempt any two questions.
  - a) What is m-colouring problem? Find all possible solutions when the following graph is coloured with exactly 3 colours.



b) Solve the following instance of TSP using Dynamic Programming Method for following matrix.

	$\infty$	10	8	14]
Λ —	22	$\infty$	7	6
A –	9	10	$\infty$	4
	5	6	2	$\infty$

c) Find the minimum spanning tree for the following graph using Kruskal's Algorithm.



*Q6)* Attempt any Three questions.

[3×4=12]

- a) What is Huffman code? Obtain the set of optimal Huffman codes for the messages with frequencies 6, 7, 9, 10, 12, 14, 22
- b) Define : Tree edge, Back Edge, Forward Edge, Cross Edge.
- c) Write non deterministic algorithm to sort set of 'n' positive integers.
- d) Explain string editing problem and write its recurrence realtion.

# $\circ$ $\circ$ $\circ$

[2×6=12]

Total No. of Questions : 6]

**PB-3027** 

SEAT No. :

[Total No. of Pages : 2

## [6255]-202

#### M.Sc.

### (COMPUTER SCIENCE)

# CS-552 MJ : Mobile App Development Technologies (2023 Pattern) (Semester - II)

[Max. Marks : 70] *Time : 3 Hours]* Instructions to the candidates: All questions are compulsory. 1) 2) Figures to the right indicate full marks.  $[6 \times 2 = 12]$ Q1) Solve any six of the following : a) What is view? b) What is Intent? List its types. c) Explain the term android fragment. d) Which class is used to create notification? e) What is Grid View? f) List various types of menus in android. g) What is phone gap? Q2) Solve any four of the following :  $[4 \times 3 = 12]$ a) Explain Toast with example. b) What is Android Service? Explain types of services with example. c) What is mobile App? Explain various types of mobile Apps. d) What is broadcast Receiver?

e) Explain accelerometer.

#### [6255]-202

2

# a) Solve any two :

Q5) Attempt the following :

- Write an Android Program to demonstrate spinner. i)
- What ViewGroup class? Explain any 4 in detail. ii)
- iii) Write a short note on Android Content Providers.
- b) Explain alarm.
- *Q6*) Write short notes on any two of the following :  $[2 \times 5 = 10]$ 
  - a) runONUiThread
  - b) Adapters
  - c) Event handling in android

# жжж

#### Q3) Solve any three of the following :

- a) What is thread? Explain the use of AsynTask class.
- b) What is Android OS? Explain its architecture in detail.
- c) Explain PhoneGap Plug-Ins? Explain steps to publish a plugin to npm.
- d) Explain various types of Mobile OS. Differentiate them.

#### $[3 \times 4 = 12]$ Q4) Solve any three of the following :

- a) Write an Android Program to print addition of two numbers.
- b) Write short note on storage in Android.
- c) What are the Components of an Android Application? Explain all.
- d) Explain activity life cycle in detail.

 $[2 \times 5 = 10]$ 

[2]

Total No. of Questions : 5]

**PB3028** 

SEAT No. :

[Total No. of Pages : 2

#### [6255]-203

# First Year M.Sc. COMPUTER SCIENCE CS-553-MJ : Software Project Management (2023 Credit 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) Q.2 to Q.5 carry equal marks. 4) Figures to the right indicate full marks. **Q1**) Attempt any five of the following : [5] What is Project? a) b) What is Change Control Board? What is CMM? c) d) What is Cost Estimating? What is Solicitation? e) What is Risk? f) Explain benefits of size oriented software metrics. **g**) **Q2)** Attempt the following : What is WBS? Explain different types of WBS. [4] a) b) What is project plan? Explain components of a project plan. [4]

c) Discuss PSP/TSP in detail.

*P.T.O.* 

[2]

**Q3)** Attempt the following :

a)	What is GANTT chart? What are the uses of GANTT charts?	[4]
b)	What is quality assurance? Discuss various activities of QA.	[4]
c)	What is project development?	[2]

## **Q4)** Attempt the following :

a)	What is project reporting? Why is it so important?	[4]
b)	Discuss different types of risk in software project management?	[4]
c)	Write short note on Staff acquisition.	[2]

## **Q5)** Attempt the following :

a)	What do you mean by	' a stakeholder?	Describe	different	types	of
	stakeholder.				[;	5]

b) Explain COCOMO - I model. [5]



#### **PB-3029**

### [6255]-204

#### F.Y. M.Sc.

# COMPUTER SCIENCE CS-560 MJ : Full Stack Development - I (2023 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 :

- a) List out the technologies included in the MEAN stack.
- b) What are 'let' and 'const' in ES6?
- c) What are services in Angular?
- d) What is asynchronous programming in Node.js?
- e) What is Express JS?
- f) What are the key building blocks of Angular?

#### **Q2)** Attempt the following :

- a) What are symbols in ES6 and how are they used? Explain with an example. [2]
- b) Discuss the MVC pattern and its relevance to web application development, with reference to ExpressJS. [4]
- c) Explain architecture of MEAN Stack. [4]

*P.T.O.* 

SEAT No. :

[Total No. of Pages : 2

 $[5 \times 1 = 5]$ 

[10]

#### **Q3)** Attempt the following :

- a) Explain what TypeScript is with Static Typing feature with example? [2]
- b) What is middleware in ExpressJS. Provide examples of three common middleware functions used in ExpressJS. [4]
- c) Explain the concept of the event loop in Node.js and discuss its role in managing asynchronous operations. [4]

#### Q4) Attempt the following :

- a) What is NPM? How to install package locally? [2]
- b) What are filters in AngularJS? Explain different types of filters with example. [4]
- c) Discuss destructuring assignment in ES6 with types and example. [4]

## Q5) Attempt the following (Any two) : [10]

- a) Explain how modules work in TypeScript. Provide an example of importing and exporting modules using ES6. [5]
- b) What is Event? Explain Event Emitter class with example. [5]
- c) Explain streams in Node JS. Explain any two types of streams. [5]

## жжж

[10]

Total No. of Questions : 6]

**PB-3030** 

[Total No. of Pages : 2

SEAT No. :

# [6255]-205

# M.Sc. (Computer Science) CS - 562 - MJ : WEB SERVICES (2023 Pattern) (Semester - II)

Tim	e : 2 1	Hours] [A	Max. Marks : 35
Instr	ructio	ns to the candidates :	
	1)	All questions are compulsory.	
	2)	Questions 2 to 6 carry equal marks.	
<b>Q1</b> )	Sol	ve any five of the following :	[5]
	a)	Give the use of SOAP must understand attribute.	
	b)	What is SOA?	
	c)	Define Distributed Computing.	
	d)	Give the two operating modes of UDDI registry.	
	e)	What is envelope in the SOAP message?	
	f)	HTTP is a stateless protocol. State True / False.	
<b>Q</b> 2)	Att	empt any 2 out of 3 :	[6]
	a)	What are the characteristics of Web Services?	[3]
	b)	What are the advantages and disadvantages of SOAP?	[3]
	c)	Explain the publishing API of UDDI.	[3]
<b>Q3</b> )	Att	empt any 2 out of 3 :	[6]
	a)	Explain the architectural elements of REST.	[3]
	b)	What are <definition> and <port type=""> elements in W example for each.</port></definition>	SDL? Write an [3]
	c)	Explain the web-service life cycle.	[3]
			<i>P.T.O.</i>

<b>Q4</b> )	Atte	mpt any 1 out of 2 :	[6]
	a)	Explain the basic steps of implementing web services.	[6]
	b)	Describe UDDI data structures and their relationships with diagram.	[6]
Q5) Attempt all :			[6]
	a)	What is CORBA?	[2]
	b)	Differentiate between SOAP and REST.	[4]
<b>Q6</b> )	Atte	mpt all :	[6]
	a)	Write any two differences between JSON and XML.	[2]
	b)	Draw the structure of the SOAP message and describe each element	.[4]

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Total No. of Questions : 5]

**PB-3031** 

[Total No. of Pages : 2

SEAT No. :

# [6255]-206

# F.Y. M.Sc. (Computer Science) CS - 564 - MJ : ASP.NET PROGRAMMING (2023 Pattern) (Semester - II)

#### Time : 2 Hours] [Max. Marks : 35] 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) Solve any eight of the following : [8] From which base class all Web Forms are inherited. a) How long the items in View State exists? b) How you can add an event handler? c) d) Write any two properties of Textbox. e) What is CTS? What is meant by ASP? f) What is Panel? **g**) Define Session State. h) What is the use of Field validator? i) Define Grid View Control. i) Q2) Attempt any four : [8] Explain Range Validator? a) Write short notes on Event Handling? b) How to create a webpage? c) What are the different validators in ASP.NET? d) What is Dataset? e)

*P.T.O.* 

#### **Q3**) Attempt any four :

- a) Explain Exception Handling.
- b) Write a short note on the Master Page.
- c) What is caching?
- d) List the events in the page life cycle.
- e) Explain the Connection and Command Object.

#### Q4) Attempt any two :

- a) Write the steps to deploy the website on IIS.
- b) Explain ADO.NET working.
- c) Write the Disadvantages of ASP.NET MVC.

#### Q5) Attempt any one of the following :

- a) What is a Page level tracing?
- b) Explain the Regular expression validator with an example.



[8]

[3]

[6255]-206