MCA - Sem - V - CBSGS - Advanced Web Technology & Dot Net.

QP Code : 25282

(3 Hours) **[Total Marks : 80]**

N.B: (1) Question No.1 is Compulsory.
(2) Attempt any four from Q.2 to 7.

1.	A	Differentiate between the following(Any Two) i. In Process and out of process state Management in ASP.NET ii. Dataset and DataReader iii. PostBack and CrossPage Posting	10
	B	Explain ASP.NET page life cycle with suitable example.	10
2.	A	What is WCF endpoint? Why to use WCF instead of Web service.	8
	B	What are validation server controls? Write a program to illustrate use of Customvalidator.	7
3.	A	What is web service? Explain steps to create and consume a web service in ASP.NET	8
	B	Explain the architecture of. NET Framework.	7
4.	A	Explain File handling in C#.	8
	B	Explain RDF and OWL	7
5.	A	What is Runtime Polymorphism? Explain how will you achieve it in C#	8
	B	Explain: I) Silverlight ii) ASP.NET Calendar Control	7
6.	A	What is CLR? Explain working of CLR	8
	B	Explain Script Manager and Update Panel control in AJAX	7
7.	A	Write a short note on(Any three) i. jQuery ii. SOA iii. Viewstate iv. Static constructor in C#	15

MCA / sem V / CBGS / Wireless and Mobile Tech / Nov-15

Q.P. Code : 25285

(3 Hours) **[Total Marks :80**

N.B. : (1) Question No. 1 is compulsory
(2) Attempt any four from the remaining six questions.
(3) Assumptions should be made whenever required and should be clearly stated
(4) Answers to sub questions should be answered together
(5) Illustrate answers with diagrams wherever necessary.

1. (A) Explain how the registration and location update occurs in GSM when the mobile station moves from one LA to another considering all the scenarios. **10**
   (B) What is spread spectrum and list the advantages of spreading the spectrum. Explain DSSS **10**

2. (A) Discuss the WAP protocol architecture in detail. **8**
   (B) What is piconet and scatternet? Discuss the different states of Bluetooth device. **7**

3. (A) What is convolution code? What n. k. and K represents in (n,k,K) code. Draw an encoder and state diagram defined by $v_{n1}=u_{n-2} \oplus u_n$, and $v_{n2}=u_{n-2} \oplus u_{n-1} \oplus u_n$ **8**
   (B) Define free space loss. Suppose a transmitter produces 50W of power. **7**
   (i) Express the transmit power in dB W.
   (ii) If the transmitter's power is applied to unity gain antenna with a 900 MHz carrier frequency, what is the received power at a free space distance of 100m?

4. (A) With a focus on security, what are the problems of WLANs? List down the weakness of WEP algorithm. What changes has been made in WPA and WPA2 to address the weakness? **8**
   (B) List the entities of mobile IP and describe data transfer from a fixed to a mobile node and vice versa. Why and where is encapsulation needed? **7**

5. (A) Explain Indirect TCP and Snooping TCP with its advantages and disadvantages. **8**
   (B) Discuss the WiMAX architecture in detail. **7**

6. (A) Explain the GSM system architecture in detail. **8**
   (B) Explain the Bluetooth protocol stack in detail. **7**

7. (A) Write Short Notes on **any three** :- **15**
   (a) Frequency reuse
   (b) Fading
   (c) SyncML
   (d) VML and WML Script

MCA- Sem-V-(CBSGS) - Soft Computing. NOV-15.

QP Code : 25289

Duration: 3 hours | Marks: 80

Note: 1) **Question 1 is compulsory.**
2) Attempt **any four** from Question 2 to Question 7.
3) Use of calculator is allowed.

Q1 a) Using Zadeh's notation, determine the λ-cut sets for the given fuzzy sets: 5

$$A = \left\{\frac{1}{1.0} + \frac{0.75}{1.5} + \frac{0.3}{2.0} + \frac{0.15}{2.5} + \frac{0}{3.0}\right\}$$

$$B = \left\{\frac{1}{1.0} + \frac{0.6}{1.5} + \frac{0.2}{2.0} + \frac{0.1}{2.5} + \frac{0}{3.0}\right\}$$

Express the following for λ = 0.55

1. $A \cup B$ 2. $A \cap B$ 3. $A \cup \overline{A}$ 4. $\overline{A} \cap \overline{B}$ 5. $\overline{A \cap B}$

b) Differentiate between 15
i) Classical sets and Fuzzy sets
ii) Genetic algorithm versus traditional algorithm
iii) Hard Computing and Soft Computing.

Q2 a) Discuss the architecture of Perceptron with the training algorithm. 08

b) Consider two fuzzy sets R and S 07

	Y1	Y2
R = X1	0.6	0.3
X2	0.2	0.9

	Z1	Z2	Z3
S= Y1	1	0.5	0.3
Y2	0.8	0.4	0.7

Find Max-min composition and Max-product composition.
$T = R \circ S$
$U = R . S$

Q3 a) What is Fuzzy Inference system (FIS)? Explain it along with its types. 08

b) Draw the flowchart of Genetic Algorithm and explain various types of crossover and mutation techniques. 07

Q4 a) Design a computer software to perform image processing to locate objects within a scene. The two fuzzy sets representing a plane and a train image are: 08

$$Plane = \left\{\frac{0.2}{train} + \frac{0.5}{bike} + \frac{0.3}{boat} + \frac{0.8}{plane} + \frac{0.1}{house}\right\}$$

$$Train = \left\{\frac{1}{train} + \frac{0.2}{bike} + \frac{0.4}{boat} + \frac{0.5}{plane} + \frac{0.2}{house}\right\}$$

Find the following:

(1) $Plane \cup Train$ (2) $Plane \cap Train$ (3) $\overline{Plane}$ (4) $\overline{Plane \cup Train}$

(5) $\overline{Plane \cap Train}$ (6) $Train \cup \overline{Train}$ (7) $Plane \cap \overline{Plane}$ (8) $\overline{Train}$

(b) Define Defuzzification. What are the different method of defuzzification Process. 07

Q5 a) Using inference method, find the membership values for each of the triangular shapes (I, R, E, IR, T) for each of the following (all in degrees): 08

1) 45 , 55, 80
2) 40 , 60 , 80

b) What is fuzzification? Explain in brief methods of membership value assignments. 07

Q6 a) Perform the following operations on intervals 08

1. [3, 2] + [4, 3]
2. [2, 1] x [1, 3]
3. [4, 6] ÷ [1, 2]
4. [3, 5] – [4, 5]
5. Image of interval [5, 3]
6. Inverse of interval [5, 3]
7. If A=[2, 4] and B =[-4, 5] find Max i.e. $A \vee B$
8. If A=[2, 4] and B =[-4, 5] find Min i.e. $A \wedge B$

b) Explain in brief architecture of Fuzzy Logic Controller (FLC). 07

Q7 Write a short note on **any three** 15

1. Activation functions in ANN
2. Belief and Plausibility Measures
3. Aggregation of fuzzy rules
4. Fuzzy Decision Making

MCA- Sem-V-(CBSGS) – Distributed computing & Cloud computing-Nov-15

QP Code : 25290

3 HOURS Total Marks: 80

N.B. 1. *Question No. 1 is compulsory.*

2. *Answer any FOUR from the remaining SEVEN questions.*

3. *Figures to the right indicate full marks.*

1	a.	Explain the following terms briefly:	10
	i.	Mutual Exclusion	
	ii.	Immutable Files	
	iii.	Happened Before Relation	
	iv.	Memory Consistency	
	v.	Hypervisor	
	b.	Why is process migration important in a distributed system? What are the desirable features of good process migration mechanism? Explain the mechanism of migration with a diagram.	10
2	a.	Explain with diagram how logical clocks are implemented with counters and physical clocks.	8
	b.	Give a mechanism for consistent ordering of messaging in following case:-	7
		a. one-to-many communication	
		b. many-to-one communications	
		c. many-to-many communication	
3	a.	Explain client-server binding with special focus on server location, simultaneous bindings and exception handling for RPC.	8
	b.	What is critical section? How will you implement a mutual exclusion algorithm? Describe Ricart and Agrawala's algorithm for mutual exclusion.	7
4.	a.	What is clock synchronization? Explain with a diagram, how logical clocks are implemented with counters and physical clocks.	8

[PTO

	b.	Explain preemptive process migration. What are different address space transfer mechanisms used in process transfer?	7
5.	a.	Explain with suitable examples, a process using multiple threads-	8
	i.	In a Dispatcher- Worker model	
	ii.	In a pipelined Process model	
	iii.	In a Team model	
	b.	What are the main differences between the Load balancing and load sharing approaches for process scheduling in distributed system.	7
6.	a.	What is cloud computing? Explain in brief cloud delivery models and its deployment models.	8
	b.	Explain in brief grid computing. How does it differ from cloud computing?	7
7.		Write a short note on any **Three** of the following :-	15
	i.	Light weight RPC	
	ii.	Munin Distributed System	
	iii.	Virtualization	
	iv.	Service Oriented Architecture (SOA)	
	v.	Identity Access Management(IAM)	

———— X ————

MCA - Sem-V. (CBSGS) - Cyber Security. - Nov-15.

Q.P. Code : 25293

(3 Hours) **Total Marks: 80**

N.B. (1) Question No. **1** is **compulsory.**
(2) Attempt any **four** from the remaining **six** questions.
(3) Illustrate answers with neat sketches wherever required.
(4) Answers to questions should be **grouped** and written **together.**

Q. 1 (a) Describe Classification of Cybercrime.? Explain with suitable examples. **10**

(b) What is Steganography? Explain its Techniques and Applications. **10**

Q.2 (a) What is Cybercrime and the Indian ITA 2000 ? **8**

(b) Explain Software Piracy with Domain Name Disputes **7**

Q. 3 (a) Describe the concept of Social Engineering **8**

(b) Explain Proxy Servers and Anonymizers **7**

Q. 4 (a) Explain Importance of Endpoint Security in Organizations **8**

(b) What are different phases during attack on the network? **7**

Q. 5 (a) Describe Virus and Worms with their types. **8**

(b) What is SQL Injection (SQLi) and How to Fix It ? **7**

Q. 6 (a) Define Cyberstalking. Explain its Identification and Detection. **8**

(b) Explain Keyloggers and Spywares in brief. Add a note on Password Cracking. **7**

Q. 7 Write the short notes on any three **15**

(a) Cyber squatting

(b) Buffer Overflow

(c) Trojan Horses and Backdoors

(d) DoS and DDoS Attacks

MCA - sem - IV (CBSGS) - Multimedia Technology - Nov-15.

Q.P. Code : 25296

(3 Hours) **Total Marks: - 80**

N.B. (1) Question No. **1** is **compulsory.**
(2) Attempt any **four** from the remaining **six** questions.
(3) Illustrate answers with neat sketches wherever required.
(4) Answers to questions should be **grouped** and written **together.**

Q. 1 (a) What is Multimedia? Explain in detail various elements of Multimedia. **10**

(b) A message is consisting of five different symbols ABCDE.
The symbol's frequencies are:

Symbol	Frequency
A	24
B	12
C	10
D	8
E	8

Generate a Huffman code tree? Show Weight order and how many bits are required to transmit the complete string ABCDE. **10**

Q.2 (a) Explain in detail various animation techniques. **08**

(b) What is meant by the terms Hypermedia and Hypertext? Distinguish between these two concepts. **07**

Q. 3 (a) What is MIDI? Explain the advantages and disadvantages of MIDI audio over digital audio. **08**

(b) List and explain various types of Multimedia authoring tools. **07**

Q. 4 (a) Explain analog display standards and digital display standards in detail. **08**

(b) Explain in detail Vector drawn objects and bitmaps? **07**

Q. 5 (a) Explain various considerations involved in delivering a multimedia project. **08**

(b) Explain video recording and tape formats in detail. **07**

Q. 6 (a) Discuss different types of Multimedia Structures? How they are organized. **08**

(b) Explain the process of making Multimedia Project. **07**

Q. 7 Write the short notes on any three **15**

(a) Alpha and Beta Development

(b) CBT

(c) Hot Spots

(d) Interlacing scanning

(e) MPEG Compression Process

PA-Con. 6399-15.