QP CODE : 516201

[Max Marks: 80]   [Duration: 3hrs]

N.B.:   (1) Question No 1 is compulsory

(2) Answer any four questions from Q.2 to 7

Q 1   Attempt the Following (Any Four)   20
   a)   What is Search Engine? Explain Search Engine Optimization.
   b)   Explain In Process and Out of Process Session Management in ASP.NET
   c)   What is jQuery? Explain difference between JavaScript and JQuery.
   d)   What are delegates in C#? Explain with a suitable example.
   e)   Write a note on UDDI

Q 2   a)   What are Generic Functions and Classes in C#? Explain the constraints   8
           on generic programming in C#.
      b)   What is Session management? Explain any two Client side session   7
           management techniques with an example in ASP.NET

Q 3   a)   What is a Web Service? Explain steps to create and Consume a web   8
           service in ASP.NET with a suitable program.
      b)   What is CLR? Explain working of CLR. Add note on features of CLR.   7

Q 4   a)   Write a C# Program to read a Text File and Write Data in a Text File.   8
      b)   Write Notes on   7
               i)   WPF
               ii)   WF

Q 5   a)   What is Disconnected ADO? Write a C# application to Connect to EMP   8
           table using Disconnected Manner. Write Insert, Update, Delete and
           Select operations for the table.
      b)   Explain use of Virtual and Override keyword with a suitable example in   7
           C#.

Q 6   a)   What is XAML? Explain significance of of XAML with a suitable example   8
           in modern Presentation technologies.
      b)   What are Validation Server Controls? Write a ASP.NET application to   7
           illustrate their use.

Q 7   a)   What is Ajax? Explain Significance of Ajax? Add a Note on UpdatePanel   8
           and ScriptManager control of Ajax.
      b)   Explain the difference between CrossPage and PostBack Posting with   7
           an example.

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QP CODE : 516300

(3 Hours) [Total Marks: 80]

N.B: (1) Question **No.1** is compulsory.
(2) Answer any **four** from 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 whenever necessary

1. (a) What are the functions of authentication and encryption in GSM? How the [10] system security is maintained?

(b) What are the different types of control channels in GSM? Explain how and what [10] control channels are used for mobile originated and terminated calls in GSM.

2. (a) What is spread spectrum? Explain the Direct Sequence Spread Spectrum in [08] detail.

(b) Explain with the state diagram how the bluetooth devices changes from the [07] standby state to the active state

3. (a) What modifications are made to the architecture to accommodate GPRS. Explain [08] with the help of the diagram with its components.

(b) What is a convolution code? Draw a shift register and state diagram for the [07] encoder (2,1,3)

4. (a) Explain the indirect TCP and Snooping TCP with its advantages and [08] disadvantages

(b) Give reasons for a handover in GSM and the problems associated with it. What [07] types of handover can occur?

5. (a) Explain the IEEE 802.11 system architecture with diagram. Discuss the services [08] provided by IEEE 802.11

(b) Discuss the following impairments in wireless environments. [07]
(i) Atmospheric absorption (ii) Multipath Propagation (iii) Fading

6. (a) List the entities of mobile IP and describe data transfer from a mobile node to a [08] fixed node and vice versa. Why and where is encapsulation needed?

(b) Discuss IEEE 802.16 architecture and its services. [07]

7. Write short notes any **three** of the following: [15]

(a) Hidden and Exposed terminals (b) Different types of short messages
(c) Tromboning (d) SyncML

QP CODE : 516400

[Total Marks : 80

(3 Hours)

N.B. :   1) Question No.1 is **compulsory.**
2) Attempt any **four** from the remaining **six** questions.
3) Use of calculator is allowed.

Q.1 (a) Draw and explain Perceptron network. Explain Perceptron Learning rule. 10

(b) What is Genetic algorithm? Explain Genetic algorithm with the help of flowchart 10

Q.2 (a) Find aggregate fuzzy set of following fuzzy sets. And find m* using centroid method and centre of sums method. 08
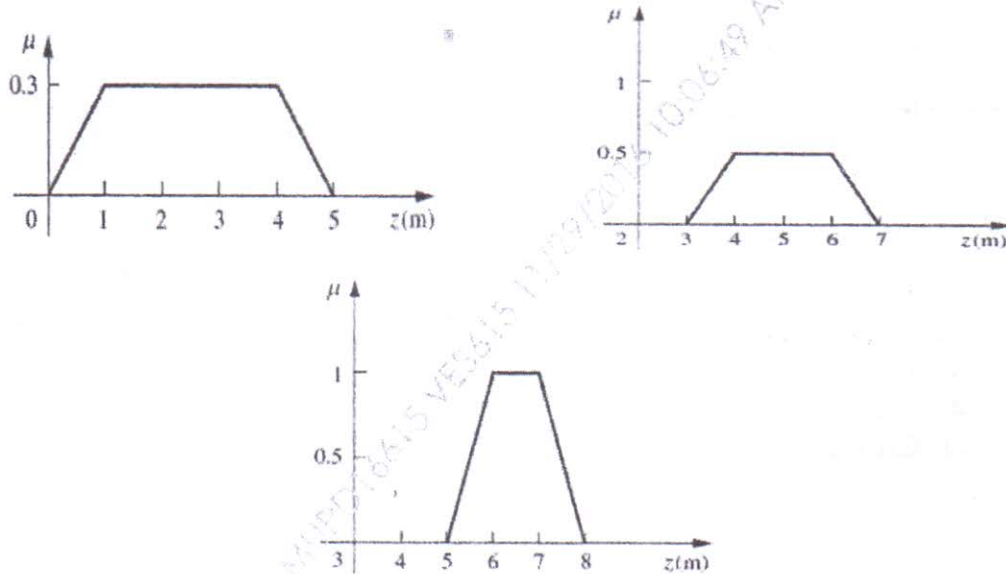
(b) Explain different features of Membership functions. 07

Q.3 (a) Consider two given fuzzy sets 08

$$A = \{ 1 / 2 + 0.3 / 4 + 0.5 / 6 + 0.2 / 8\}$$
$$B = \{0.5 / 2 + 0.4 / 4 + 0.1 / 6 + 1 / 8\}$$

Perform union, intersection, difference and complement over fuzzy set A and B

(b) Differentiate between Brain and Computer. 07

[TURN OVER]

Q.4 (a) Consider two fuzzy sets R and S

		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.

(b) Define artificial neural network. Explain different types of neuron network architecture in detail.

Q.5 (a) Explain architecture of Adaline(adaptive linear neuron) with its training algorithm.

(b) Explain any 2 Fuzzy decision making techniques with the help of an example

Q.6 (a) Explain Associative memory network with its types.

(b) Explain working principle of Fuzzy Inference system (FIS) with its types.

Q.7 Write short note on (any 3)

    a) Travelling Salesman Problem.
    b) Lambda cut for the fuzzy set.
    c) Crossover and Mutation operators of GA.
    d) Set of operations performed on Interval.
    e) GA v/s Traditional Algorithm.

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QP CODE : 516500

3 HOURS   Total Marks: 80

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

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

3. Figures to the right indicate full marks.

1   a.   Explain the concept of logical clocks and their importance in distributed system.   10
A clock of a computer system must never run backward. Explain how this issue
can be handle with implementation of logical clock.

b.   Explain in details how the existence of multiple computers in distributed system is 10
made invisible and only single system image is provided to the user.

2   a.   Explain Election Algorithm in detail with diagram.   8
b.   Explain various Clock Synchronization Algorithm in detail.   7

3   a.   What is Stub? Explain how the use of Stubs helps in making an RPC mechanism   8
transparent.
b.   What are the Load Balancing transfer policies used for distributed system   7
management.

4.   a.   Why is the process migration important in Distributed System? What are   8
different address   space transfer mechanisms used in process transfer.
b.   What is Critical Section? How will you implement Mutual Exclusion Algorithm?   7

5.   a.   What are threads? How they are different from process? Explain various Thread   8
Models.
b.   Explain Different Consistencies Model for Distributed Shared Memory System.   7

6.   a.   What is Cloud Computing. Discuss the characteristics of Cloud Computing.   8

b.   How the Data Security maintained in the cloud?   7

7.   Write a short note on any **Three** of the following :-   15

i.   Grid Computing

ii.   Total ordering of the Event

iii. Failure Handling Mechanism

iv.   Call Back RPC

v.   Happened Before Relation

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QP CODE : 516600

(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 Cyberstalking? Is it a Cybercrime under India IT Act?   10

       (b)   Explain Cost of Cybercrimes and IPR Issues with suitable diagram.   10

Q.2   (a)   What kinds of attacks are possible on mobile/cellphones? Explain.   8

       (b)   Define strengths and limitations of ITA 2000.   7

Q. 3 (a)   How are Cybercrimes classified? Explain with examples.   8

       (b)   Electronic Signatures in Global & National Commerce Act (E-Sign).   7

Q. 4 (a)   Write a short note on "Indian Legal Perspective on Cybercrime".   8

       (b)   What is Cyberlaw? Explain.   7

Q. 5 (a)   What are different phases during attack on the network?   8

       (b)   What is Phishing? Explain with examples   7

Q. 6 (a)   The Child Online Protection Act (COPA).   8

       (b)   Difference between Trojan Horses and Backdoors?   7

Q. 7 Write the short notes on any three   15

       (a)   Botnets.

       (b)   Identity Theft.

       (c)   Virus and Worms with their types.

       (d)   Difference between DoS and DDoS.

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QP CODE : 516702

(3 Hours) [Total Marks: 80]

N.B: (1) Question **No.1** is compulsory.
(2) Answer any **four** from remaining **six** questions.

1. (a) What is Multimedia? How might multimedia be used to improve the   10
lives of its users? How might it influence users in negative ways?
What might be its shortcomings?

    (b) Construct a Huffman tree for the following five letters:-   10
A B C D E
which are listed in decreasing order of frequency of use

Symbol Frequency
A   15
B   7
C   6
D   6
E   5

Calculate the total number of bits required to transfer these alphabets.

2. (a) Explain types of graphics. Differentiate between vector image and   8
bitmap image.

    (b) Discuss the importance of text and ways text can be leveraged in   7
multimedia presentations.

3. (a) Explain in details various principles of animation.   8

    (b) What is MIDI audio? Compare and contrast the use of MIDI and   7
Digitized sound in multimedia production.

4. (a) List and describe the three different types of authoring systems and   8
discuss the advantages of each one.

    (b) Discuss the differences among multimedia, interactive multimedia,   7
hypertext, and hypermedia.

5. (a) Discuss the stages of a multimedia project. Define the milestones that   8
mark the completion of the phase.

    (b) Explain the process and elements of a multimedia project proposal.   7

6. (a) Discuss different types of multimedia structures and how they might   8
be organized.

    (b) What is Compression? Distinguish between lossy and lossless   7
compression techniques.

7. Write short notes on following topics (Any Three)   15
    (a) Animation techniques
    (b) JPEG
    (c) CBT
    (d) Hot Spots, Hyperlinks and buttons

QP Code : 80063

(3 Hours) [Total Marks : 80

N.B. : (1) Question No.1 is **compulsory**.
(2) Attempt any **four** out of remaining **six** questions.
(3) Assume any necessary data but justify the same.
(4) Figures to the right indicate marks.
(5) Use of scientific calculator is allowed.

1. (a) Explain different attacks on wireless networks & counter measures you will take to stop these attacks. — 10
   (b) Consider an online payment system. For this system identify vulnerability, threat and attack. — 10

2. (a) What is the difference between attack and vulnerability? List and explain any seven attacks. — 7
   (b) What are responsibilities of Auditors in security audits — 8

3. (a) Explain various ways of guarding database against vulnerability. — 7
   (b) Explain DES. What is double DES & Triple DES? — 8

4. (a) Explain cryptography & its tools with example. — 7
   (b) Explain Secure E-Mail system with example. — 8

5. (a) Explain the different types of Intrusion Detection System (IDS) with their advantages and disadvantages — 7
   (b) Explain any two access control mechanism. Indicate clearly the advantage and disadvantages of each scheme. — 8

6. (a) What is role of Firewall in securing a network? Describe different types of Firewall. — 7
   (b) Explain various types of protection that Operating System applies at file level. — 8

7. Write Short notes (any 3):- — 15
   (a) ARP spoofing.
   (b) CAPTCHA.
   (c) System Cipher & Block Cipher
   (d) Indian IT Act.

QP CODE : 517002

[Total Marks : 80]

(3 Hours)

N.B. :   1) Question No.1 is **compulsory**.
          2) Attempt any **four** from the remaining **six** questions.

1. (a) What are the four P's focused on effective software project (10) management? Explain.
   (b) Explain the need for quality standards and Differentiate ISO- 9001 (10) and CMM standards.

2. (a) Discuss in detail SQA Plan and task.   (07)
   (b) Explain Isikawa's 7 basic tools of quality in details   (08)

3. (a) Explain McCall model for software quality.   (07)
   (b) Explain QFD its characteristics and its benefits   (08)

4. (a) Explain Zero Defects with its principle and practices   (07)
   (b) Explain FURPs and FURPS+   (08)

5. (a) Explain measures and metrics of software quality.   (07)
   (b) Discuss in detail software configuration management with its (08) limitations

6. (a) Explain the elements of Quality Management System (QMS) for (07) software.
   (b) Explain Pareto Analysis and Seven run rule for quality   (08)

7. Write Short Notes on **any three** :-   (15)
   a) Statistical Quality Assurance
   b) Boehm hierarchical model
   c) Six Sigma
   d) Glib's Approach