

QP Code :17953

(3 Hours)

Total Marks : 80

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

1. Attempt any four :- 20
- (a) Explain difference between crosspage posting and Post back posting in ASP.NET
 - (b) What is AJAX? Explain execution process of AJAX.
 - (c) What is constructor? Explain the concept of static constructor with example.
 - (d) What is UDDI? Explain significance of UDDI.
 - (e) Explain difference between In process and out of process state Management in ASP.NET.
2. (a) What is CLR? Explain working of CLR? Add a note on GAC. 8
(b) What are validation server controls? Write a program to illustrate use of Customvalidator. 7
3. (a) What is WCF? Explain the architecture of WCF in detail. 8
(b) Explain Script Manager and Update Panel control in AJAX. 7
4. Write Notes on (Any three) 15
- (a) Silverlight
 - (b) Cookies
 - (c) Viewstate
 - (d) JQuery
- Q5. (a) What is ADO.NET? Write a program to access data from a table using disconnected ADO.NET. 8
(b) What XAML? Explain importance of XAML in modern Presentation technologies. 7
- Q6. (a) What is Runtime Polymorphism. Explain how will you achieve it in C#. 8
(b) Explain :- 7
- (i) Coding Models in ASP.Net
 - (ii) ASP.NET Calendar Control
- Q7. (a) Explain :- 8
- (i) Semantic Web
 - (ii) Properties in C#
- (b) What is web service? Explain steps to create and consume a web service in ASP.NET. 7

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

(2) Attempt 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 wherever necessary

1. (a) Explain the process of call set up and mobility management in GSM. 10
What are various roaming scenarios in GSM?
- (b) How is spread spectrum technique useful in Wireless Communication? 10
Explain FHSS and DSSS.
2. (a) What are piconet and scatternet? Explain various protocols supported by 7
bluetooth protocol architecture.
- (b) What are Convolution codes? Draw an encoder with value $k=1, n=2,$ 8
 $K=3$. Encode the bit sequence 1100001 using a $(2, 1, 3)$ encoder?
3. (a) What is an antenna? What are different types of antenna? Explain the 7
term free space loss.
- (b) Explain the concept behind Dynamic Source Routing (DSR). How it is 8
different from Destination Sequenced Distance Vector (DSDV)?
4. (a) Describe WAP Programming Model. Explain the role of WAP gateway 8
and WAP user agent profile.
- (b) Explain following terms with respect to cellular networks: 7
(i) Handoff (ii) Frequency Reuse
5. (a) Explain the operation of Mobile IP. 7
- (b) Explain Selective TCP and Snooping TCP with their advantages and 8
disadvantages.
6. (a) Explain the role of GPRS support nodes in GPRS architecture. 8
- (b) Describe WIMAX network reference model along with its features. 7
7. Write short notes on: (**Any three**) 15
 - (a) IEEE 802.11 for WiFi access
 - (b) Mobile Number Portability
 - (c) VoIP
 - (d) 1G, 2G, 3G
 - (e) iMode

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- Note: 1) Question 1 is compulsory.
 2) Attempt any four from Question 2 to Question 7.
 3) Draw neat and clean diagrams wherever required.
 4) Figures to the right indicate marks.

- Q.1 A) What is learning? Explain in brief Reinforcement learning. 5
 B) What is crossover? Explain with suitable example single point and two point crossover. 5
 C) Differentiate between Hard Computing and Soft Computing 5
 D) Using Zadeh's notation, determine the λ -cut sets for the given fuzzy sets: 5

$$A = \left\{ \frac{0}{0} + \frac{0.5}{20} + \frac{0.65}{40} + \frac{0.85}{60} + \frac{1.0}{80} + \frac{1.0}{100} \right\}$$

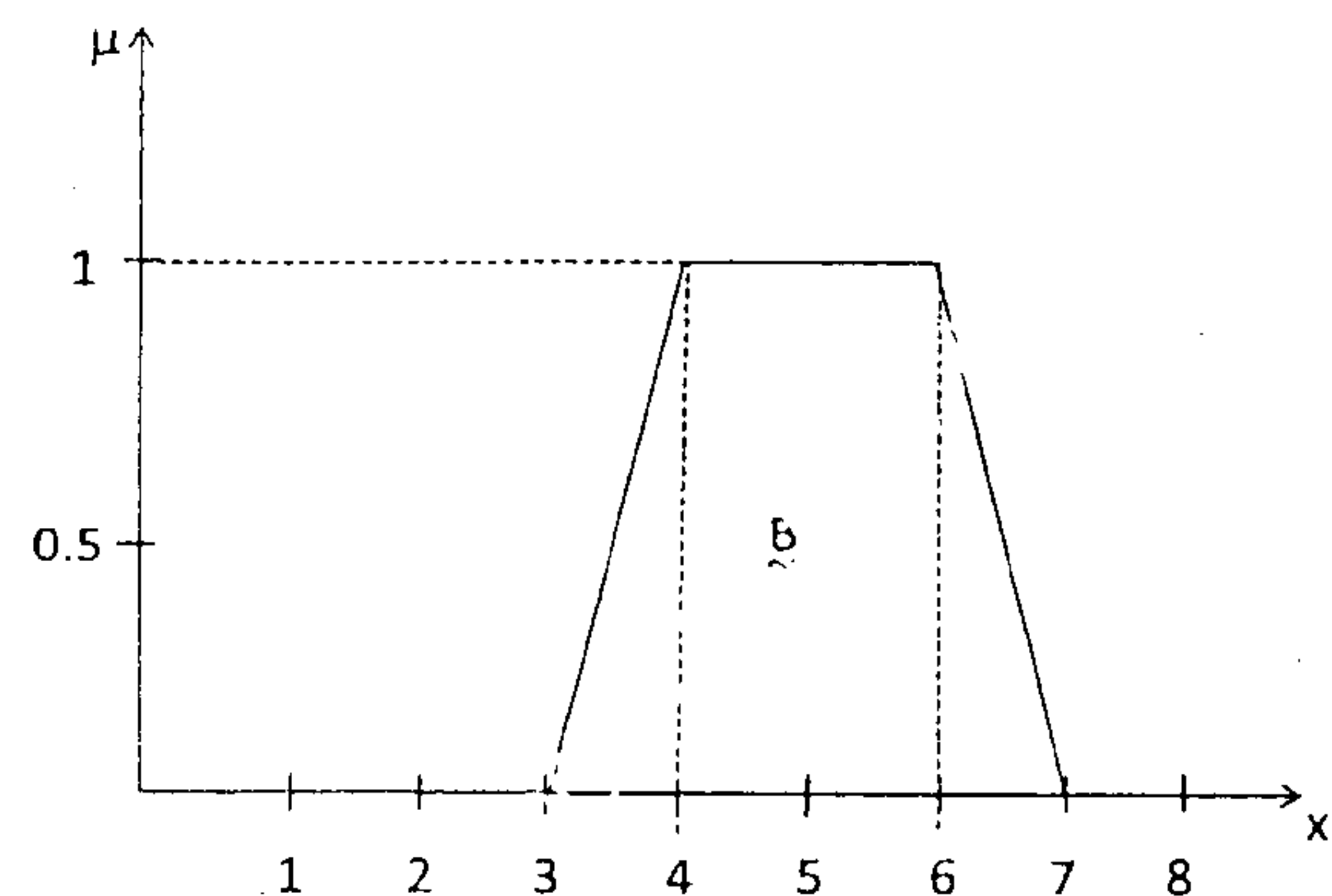
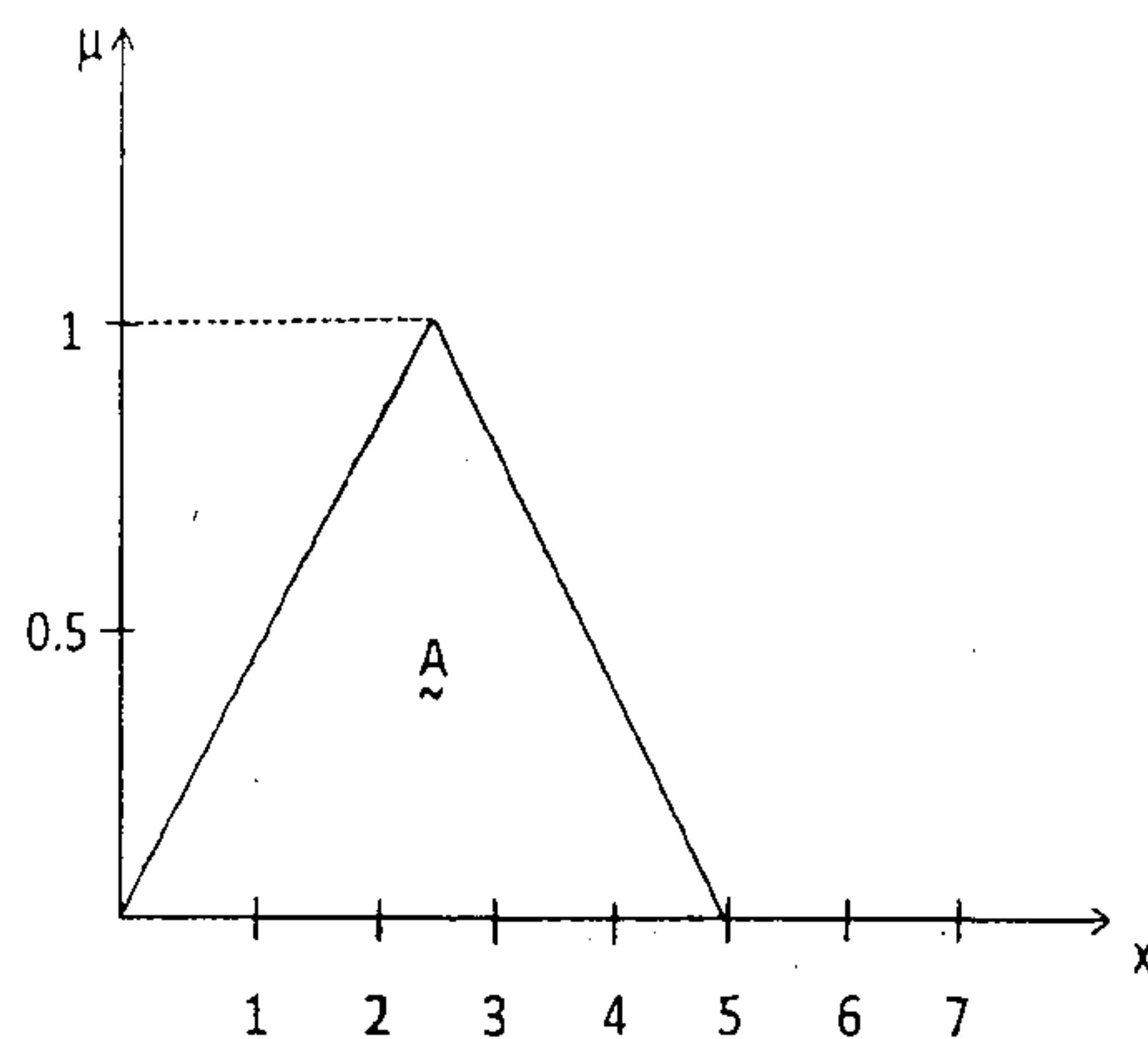
$$B = \left\{ \frac{0}{0} + \frac{0.45}{20} + \frac{0.6}{40} + \frac{0.8}{60} + \frac{0.95}{80} + \frac{1.0}{100} \right\}$$

Express the following for $\lambda = 0.5$

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

- Q.2 A) How is genetic algorithm different from traditional algorithm? Explain general genetic algorithm. 8
 B) What is Fuzzy Inference System (FIS)? With suitable block diagram, explain the working principles of an FIS. 7
- Q.3 A) What is fuzzy decision making? Explain in brief any three decision making models. 8
 B) What is fuzzy approximate reasoning? Explain different modes of fuzzy approximate reasoning. 7
- Q.4 A) Consider two fuzzy sets R and S 8
- | | | | | | | | | |
|-----|----|-----|-----|-----|----|-----|-----|-----|
| | | Y1 | Y2 | | Z1 | Z2 | Z3 | |
| R = | X1 | 0.7 | 0.6 | S = | Y1 | 0.8 | 0.5 | 0.4 |
| | X2 | 0.8 | 0.3 | | Y2 | 0.1 | 0.6 | 0.7 |
- Find the relation $T = R \circ S$ using Max-min composition and Max-product composition.
- B) Explain in brief architecture of Fuzzy Logic Controller (FLC). 7

- Q.5 A) What is membership function? List various methods employed for the membership value assignment. Explain any two in brief. 8
- B) Explain with suitable example mathematical operations performed on intervals. 7
- Q.6 A) For the logical union of membership functions shown below find the defuzzified value x^* using centroid, weighted average, first of maxima and last of maxima methods. 3



- B) With the help of neat diagram explain Adaptive Linear Neuron (Adaline) network model. Explain in brief Adaline training algorithm. 7
- Q.7 Write short note on **any three** 15
- A) Applications of Soft Computing
- B) Associative memory network
- C) Selection methods in GA
- D) Set operations performed on fuzzy interval
- E) Neuron connection architectures

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question 1 is **compulsory**
(2) Answer any **four** questions from remaining **six**
(3) **Sub questions** should be answered **together**

1. (a) What are election algorithms? Explain in detail with the diagram. 10
(b) What is cloud computing? Describe cloud computing architecture. 10
2. (a) Explain the advantages of creating new process versus creating multiple threads with in a process. Discuss various thread models. 8
(b) Explain group communication. Discuss the implementation of casual ordering semantics in CBCAST protocol of ISIS system. 7
3. (a) Explain full concept of preemptive process migration .What is different address space transfer mechanisms used in process migration? 8
(b) Compare RPC and RMI implementation. Explain with the help of diagram implementation of RPC mechanism. 7
4. Compare the following (any **three**) 15
(a) Blocking and non-blocking primitive of IPC
(b) Connection oriented and connection less programming
(c) Grid versus Cloud computing
(d) Workstation and workstation server model
5. (a) Externally synchronized clocks are not internally synchronized but converse is not true. Justify. 8
(b) How DFS is different from traditional file system? Discuss briefly the classes of file models. 7
6. (a) Explain strong consistency models. How they differ from weak consistency models. 8
(b) What are the issues in data security in cloud computing? How data can be protected in cloud? 7
7. Write short note on following (any **three**): 15
(a) Multidatagram messaging
(b) Drifting of computer clocks
(c) Client server architecture
(d) Ajax
(e) Map reduce

Cyber Security

QP Code :17964

(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.
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
 2. (a) What kinds of attacks are possible on mobile/cellphones. Explain. 8
 (b) Define strengths and limitations of ITA 2000. 7
 3. (a) How are Cybercrimes classified? Explain with examples. 8
 (b) Electronic Signatures in Global & National Commerce Act (E-Sign). 7
 4. (a) Write a short note on "Indian Legal Perspective on Cybercrime". 8
 (b) What is Cyberlaw? Explain. 7
 5. (a) What are different phases during attack on the network? 8
 (b) What is Phishing? Explain with examples. 7
 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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(3 Hours)

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 (4) Answers to questions should be **grouped** and written **together**.
- Q. 1** (a) A video can have duration (T) of 1 hour, a frame size of 640x480 at a color depth of 24 bits and a frame rate of 25 fps. Calculate the video size? **10**
- (b) Given a string, ABRACADABRA. Generate Huffman code tree? Show weight order and how many bits are required to transmit the complete string ABRACADABRA. **10**
- Q.2** (a) What is Multimedia? Explain various elements of multimedia? **08**
- (b) Explain in detail various principles of animation? **07**
- Q.3** (a) Explain in detail Bitmap images and Vector drawing Images? Differentiate between Bitmaps and Vector drawn objects **08**
- (b) Explain analog display standards and digital display standards in detail. **07**
- Q.4** (a) What is MIDI and Digital audio? Compare and contrast the use of MIDI and digitized audio in multimedia applications. **08**
- (b) Explain multimedia authoring tools and its different types in detail? **07**
- Q.5** (a) Describe any two methods for delivering a multimedia project? Discuss the benefits and drawbacks of each method. **08**
- (b) Explain various considerations involved in recording and editing a digital audio. **07**
- Q.6** (a) List and discuss various stages of making multimedia project with diagram. **08**
- (b) What is Compression? Explain JPEG Compression process in detail. **07**
- Q.7** Write the short notes on any three **15**
- (a) Multimedia Conferencing
- (b) Hot Spots, Hyperlinks and Buttons
- (c) Animation Techniques
- (d) Image File Formats
- (e) MPEG Standards