MCA Sem IV (CBSGS) May 2019.

Paper / Subject Code: 56502 / Wireless & Mobile Technology

Sem-V (CBSGS)

[3 Hours] Total Marks: 80

(1) Question No. 1 is compulsory

(2) Answer any four questions from Question No.2 to 7

(3) All questions carry equal marks.

Q.1 (A) Why are different identifiers/addresses (e.g., MSISDN, TMSI, IMSI) needed in GSM? Give reason and distinguish between user-related and system-related identifiers? [10]

(B) What is spread spectrum? Explain and differentiate the types of spreading spectrum? [10]

Q.2 (A) Explain Bluetooth architecture? Discuss the different states of Bluetooth device? [07]

(B) Explain the GPRS technology and its physical architecture? [08]

Q. 3 (A) What is Convolution code and explain it with an example? Draw a shift register and state diagram for the Encoder (2, 1, 3). [07]

(B) Discuss the WiMax architecture in detail? [08]

Q.4 (A) Explain IEEE 802.11 system architecture with diagram. Discuss the services provided by IEEE 802.11. [08]

(B)What is an Antenna? What are the different types of Antenna? Explain the term free space loss? [07]

Q.5 (A) What is the purpose of DHCP? Name the entities of DHCP? How can it is used for mobility and support of mobile IP? [08]

(B) Describe WAP Programming model. Explain the role of WAP Gateway and WAP user agent profile. [07]

Q.6 (A) Explain the Indirect TCP and snooping TCP with its advantages and disadvantages. [08]

(B) Explain the different types of fading affect the mobile environment? [07]

Q.7 (A) Write Short notes on **(Any three)** [15]

(i) Generations of Cellular networks.
(ii) i-Mode
(iii) Dynamic Source Routing
(iv) Frequency Reuse

****

(3 Hours) [Total Marks: 80]

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) Differentiate between Biological Neural Network and Artificial Neural Network (05)

(b) Explain in brief mutation technique in Genetic Algorithm. (05)

(c) What is fuzzy interval? Explain operations performed on fuzzy interval using suitable example. (05)

(d) Write a short note on unsupervised learning networks. (05)

Q.2 (a) What is fuzzification? Explain in brief any two methods of membership value assignments. (08)

(b) Determine the λ-cut sets for the given fuzzy sets: (07)

$$A = \left\{\frac{0.5}{1} + \frac{0.4}{2} + \frac{0.6}{3} + \frac{0.7}{4} + \frac{1.0}{5}\right\}$$

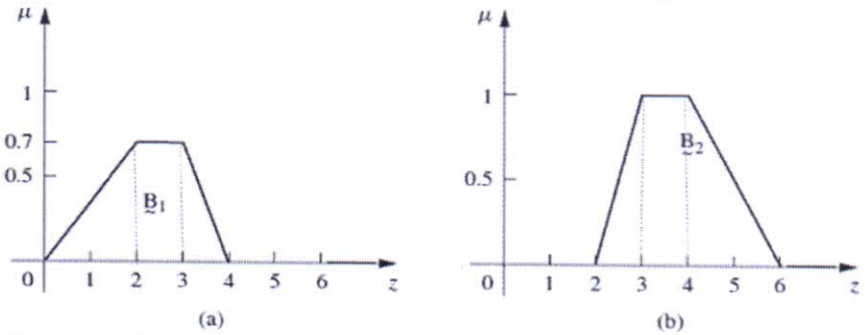
$$B = \left\{\frac{0.6}{1} + \frac{0.8}{2} + \frac{0.2}{3} + \frac{0.3}{4} + \frac{0.5}{5}\right\}$$

Find the following for $\lambda = 0.6$

1. $A \cap B$ 2. $A \cup B$ 3. $\overline{A \cup B}$ 4. $\overline{A}$ 5. $\overline{A} \cup \overline{B}$ 6. $A \cap \overline{A}$ 7. $\overline{A \cap B}$

Q.3 (a) List the fuzzy decision making techniques. Explain in brief any three techniques. (08)

(b) For the given membership function as shown in figure below, determine the defuzzified value by centroid method and weighted average method (07)



Q.4 (a) What is Fuzzy Inference system (FIS)? Explain it along with its types. (08)

(b) Implement OR function using perceptron network for binary inputs and bipolar targets. (Initial values are w1 = w2 = b =0, learning rate=1, threshold =0.2) (07)

Q.5 (a) The athletic race was conducted. The following membership functions are defined based the speed of athletes: (08)

$$Low = \left\{\frac{0.5}{1} + \frac{0.1}{2} + \frac{0.5}{3}\right\}$$

$$Medium = \left\{\frac{0.5}{1} + \frac{0.7}{2} + \frac{0.4}{3}\right\}$$

$$High = \left\{\frac{0.9}{1} + \frac{0.3}{2} + \frac{1.0}{3}\right\}$$

Find the following:
R=Low X Medium
S= Medium X High
T= RoS using Max-min composition

(b) Explain in detail different types of neuron connection architecture. (07)

Q.6 (a) Differentiate between the following (08)
1. Hard Computing and Soft Computing
2. Genetic Algorithm and Traditional algorithm

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

Q.7 Write Short Notes on ***any three*** :- (15)
1. Associative memory networks
2. Fuzzy set operations
3. Fuzzy measures
4. Extension principle
5. Travelling salesman problem using GA approach

(3 Hours) (Total Marks :80)

Please check whether you have got the right question paper.

N.B. :
1) Question **No. 1 is compulsory**
2) **Attempt** any **four** from remaining **six questions**
3) **Figures** to the **right** indicate **full marks**

1.	a)	What is Cloud Computing? What are the different benefits of Cloud Models?	10
	b)	Discuss implementation of RPC mechanism	10
2.	a)	How do you make a Distributed system transparent to the user? Name different types of transparencies.	8
	b)	Differentiate between blocking and non-blocking primitives of IPC	7
3.	a)	Explain types of strong consistency models. How do they differ from weak consistency models?	8
	b)	Explain various Clock Synchronization algorithms.	7
4.	a)	How is DFS different from a traditional file system. Discuss briefly the classes of file models.	8
	b)	Explain Mutual Exclusion Algorithm in detail.	7
5.	a)	What are the features of good global scheduling algorithm? Explain task assignment approach.	8
	b)	What is Service Oriented Architecture? Discuss with help of a diagram.	7
6.	a)	What are the issues in Data Security in Cloud Computing? How can data be protected in cloud?	8
	b)	What is DSM? Explain different consistency models.	7
7.		Write a short note on **any three** of the following	15

i. What are Threads? How are they different from a process?
ii. What are the major benefits of SOA computing.
iii. Immutable Files
iv. Fault Tolerance
v. Grid Computing

MCA SEM V (Old) Paper / Subject Code: 56505 / Cyber Security May 2019.

Total Marks: 80

(3 Hours)

N.B. : 1) Question No.1 is **compulsory.**
2) Attempt any **Four** from the remaining **Six** questions.
3) Figures to the right indicate full marks

1. (a) What Kinds of attacks are possible on mobile/ Cellphones? Explain **(10)**

(b) What is Botnet Attack? Explain in Detail. **(10)**

2. (a) What are different ways of password cracking? **(8)**

(b) What is SQL injection and what are the different countermeasures to prevent the attack **(7)**

3. (a) What is Copyright in Cyber space? How to identify first owner of copyright & its term? **(8)**

(b) How are Cybercrimes classified? Explain with examples **(7)**

4. (a) Explain & Differentiate Dos & DDos in detail? **(8)**

(b) Write Short note on Children's Online Privacy Protection Act (COPPA) . **(7)**

5. (a) What is Stenography & Cryptography explain in detail? **(8)**

(b) What is IT Act, 2000? List down the issues & salient features of Indian IT act. **(7)**

6. (a) Explain Cost of Cyber Crimes and IPR Issues with suitable diagram. **(8)**

(b) Explain Trojan Horses & Backdoors in detail? **(7)**

7. (a) Write Short Note **(Any Three)** **(15)**

1 Attacks on Wireless Networks
2 Intellectual Property in the Cyberspace of Cyber security
3 Electronic Signatures in Global & National Commerce Act
4 Buffer Over Flow

****

85A55AA012BBCD63B826DE55CDEFDBF9