III B. Tech. (CSE+IT), II Semester, 2022-23
Network Security (ECS-362)
II Class Test

Time: 1 Hour
Max Marks: 15

Note: Attempt all questions.

1. In Diffie-Hellman key exchange algorithm, let prime numbers be 11 and 7. Let A and B select their secret keys $X_A = 3$ and $X_B = 6$ to exchange secret key between two communicating parties. Compute public keys of A and B and common secret key. (3)

2. Explain Secured Hash Algorithms (SHA). In what way, Hash codes are different than Message Authentication Codes (MAC). (4)

3. Explain, briefly Kerberos authentication system. Detail the sequence of messages that happens when a client attempts to obtain a service in Kerberos 4. (4)

4. Explain Digital Signature Algorithm for signature generation and verification and its applications. (4)

Harcourt Butler Technical University, Kanpur

Second Mid-Semester Examination 2022-2023

Branch-CS&IT (Third Year)

Computer Graphics (ECS-356)

MM: 15 **Time: 1 Hour**

Note: All questions are compulsory

Q1. Magnify the triangle with vertices **A (0,0), B (1,1), C (5,2)** to twice its size while keeping **C (5,2)** fixed. (4)

Q2. Find a transformation **Tv** which aligns a given vector **V= aI + bJ + cK** with the vector **K** along the positive **z** axis. (4)

Q3. Prove that inverse of rotation matrix is equivalent to its transpose matrix ($R^{-1} = R^T$). (3)

Q4. Explain the Sutherland Hodgman Algorithm for polygon clipping. (4)

H.B.T.U KANPUR
II MID SEM EXAM: 2022-23
B.TECH (CS/IT) IIIrd Year

Subject: INTERNET OF THINGS **Subject Code: ECS-360**
Time: 1 hours **MM: 15**

Note: **Attempt all questions. All questions carry equal marks.**

1. Explain RFID with its various components and applications in detail also explain frequency of RFID used for various operations?
2. Define wireless sensor networks with its various applications and components ? Explain WSN layered network architecture in detail?
3. A channel has a bit rate of **8** kbps and propagation delay of **40** msec. For what range of frame size does stop and wait gives an efficiency of atleast **50** percent?

Harcourt Butler Technical University, Kanpur
Second Mid-Semester Examination 2022-2023
Branch Third Year CS&IT
Soft Computing (ECS-358)

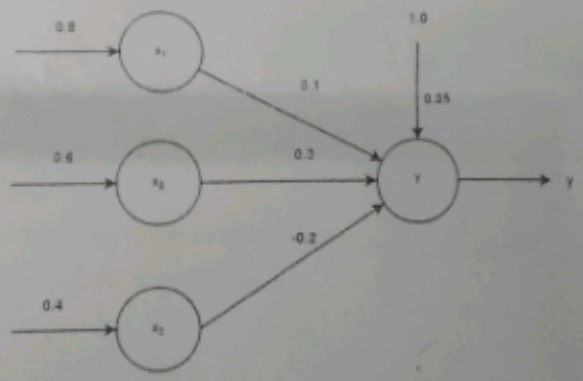
MM: 15 **Time: 1 Hour**

Note: All questions are compulsory

Q1. Define an Artificial Neural Network (ANN).Explain different kind of activation functions used in ANN. (3)

Q2. Explain the following ANN models – A) Multilayer feed-forward network B) Multilayer recurrent network. (3)

Q3. Obtain the output of neuron Y for the network shown below using activations as: (i) binary sigmoidal and (ii) bipolar sigmoidal. (3)



Q4. Explain the neural network training using Hebb rule with help of flow chart. (3)

Q5. What do you mean by unsupervised learning and Discuss the architecture of Kohonen self-organizing map. (3)

Harcourt Butler Technical University
Second Mid-Semester Examination 2022-2023
Branch Third Year CS&IT
Compiler Design (ECS-352)

MM: 15 **Time: 1 Hour**

Note: All questions are compulsory

Q1. Consider the grammar (3)

$$E \rightarrow E + E | E * E | id$$

Perform Shift reduce parsing of the input string $id + id * id$

Q2. Draw the SLR parsing table for the grammar (3)

$$S \rightarrow AA$$

$$A \rightarrow aA | b$$

Q3.Differentiate between synthesized translation and inherited translation. (3)

Q4. Explain the following - A) Dependency Graph B) Directed Acyclic Graph C) Advantages of SDT (3)

Q5.What do you mean by intermediate code generation and define its benefits? Explain any form of three address code implementation. (3)

**********Good Luck**********

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

IInd MID SEMESTER EXAMINATION 2022-23

Entrepreneurship Development (HHS-352)

B. Tech 3rd Year (ME/IT/CS/CE/EE/ET)

TOTAL MARKS – 15 **TIME: 1hr.**

Note: Attempt all Questions.

1. Define the term 'Intrapreneur'. Explain business life cycle with suitable example. [5]
2. Explain the formation of Cooperative Society with its features. [5]
3. Describe Strategic Management along with its characteristics. [5]