

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET A**

**SCHOOL OF INFORMATION SCIENCE  
END TERM EXAMINATION - JAN 2024**

**Semester :** Semester I - 2023

**Course Code :** CSA4025

**Course Name :** Computer Networks

**Program :** MCA

**Date :** 11-JAN-2024

**Time :** 1:00 PM - 4:00 PM

**Max Marks :** 100

**Weightage :** 50%

**Instructions:**

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

**PART A**

**ANSWER ALL THE QUESTIONS**

**4X5M=20M**

1. Explain how would you design Class A, Class B and Class C of IP?  
(CO1) [Knowledge]
2. Explain the various fields of UDP header and the working of the UDP protocol.  
(CO2) [Knowledge]
3. Discuss about Various Types of Error Detection Techniques  
(CO3) [Knowledge]
4. Discuss about Inter-network Routing?  
(CO3) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**5X10M=50M**

5. A student attaches a laptop to campus network and request/receives a web page from www.google.com . Compose your view on the sequence of operations carried out with the help of different protocols used in Application Layer , Transport Layer, Network Layer and Linklayers  
(CO1) [Comprehension]
6. Discuss in detail about the types of Networks  
(CO2) [Comprehension]
7. Find the First host ID, Broadcast address and network address for the first three networks , the given address is 172.168.0.0/19  
(CO3) [Comprehension]

8. a) Write a Short note on Go-Back-N Protocol  
 b) In GB4, if every 6th packet being transmitted is lost and if we have to send 10 packets then how many transmissions are required where N=4.

(CO4) [Comprehension]

9. Implement the check sum mechanism for the following frame sequence in both sender and receiver side. Corrupt the third bit in second frame and fifth bit in the fourth frame and show the resultant checksum is an error at receiving side.

F1 : 1010101 F2 : 0010110 F3 : 0100111 F4 : 1001101

(CO4) [Comprehension]

### PART C

**ANSWER ALL THE QUESTIONS**

**2X15M=30M**

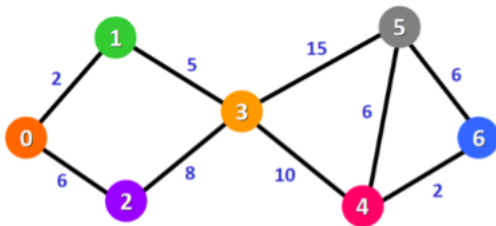
10. Consider the message sender wants to send is 1010001101, and the generator polynomial is  $x^5+x^4+x^2+1$

- a) Find the message transmitted by the sender. If the receiver receives the message, check if the receiver receives the correct message or not.  
 b) Inverse the third bit and show the error at the receiving end.

(CO4) [Application]

11. Implement the Link state routing algorithm for the following graph.

- a) Find the Shortest Path from Node 0 to Node 6  
 b) Sketch the Routing table of Each Node



(CO4) [Application]