

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING  
END TERM EXAMINATION - JUN 2023**

**Semester :** Semester IV - 2021

**Course Code :** CSE2011

**Course Name :** Sem IV - CSE2011 - Data Communication and Computer Networks

**Program :** CSE&ISR

**Date :** 12-JUN-2023

**Time :** 9.30AM-12.30PM

**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**

**(10 X 2 = 20M)**

1. List some of the possible services of network layer.  
(CO2) [Knowledge]
2. What is VLAN? Mention any 1 difference between LAN and VLAN.  
(CO3) [Knowledge]
3. Differentiate between periodic and non-periodic signals.  
(CO4) [Knowledge]
4. What are the values of SNR and  $SNR_{db}$  for a Noiseless Channel?  
(CO4) [Knowledge]
5. What are the functionalities of a data link layer?  
(CO3) [Knowledge]
6. In IPv4, what is the value of the total length field in bytes if the header is 28 bytes and the data field is 400 bytes?  
(CO2) [Knowledge]
7. What is classless IP addressing? Show the representation of CIDR IP address.  
(CO3) [Knowledge]
8. What is bit rate? what is the unit to measure bit rate?  
(CO4) [Knowledge]

9. When you connect your laptop from Presidency University to the home network will the IP address change? Justify.

(CO1) [Knowledge]

10. Decode the meaning of HTTP status codes.

- a. 200
- b. 301

(CO1) [Knowledge]

## PART B

**ANSWER ALL THE QUESTIONS**

**(5 X 10 = 50M)**

11. List any three Characteristics of UDP protocol and also explain UDP segment structure with a neat diagram.

(CO1) [Comprehension]

12. What is subnetting in networking? What are the advantages of subnetting? Consider- a single network having an IP Address of 200.1.2.0. Divide this network into 4 subnets and find the range of IP addresses of all four subnets.

(CO2) [Comprehension]

13. The most important element in keeping the world wide web up is DNS. Explain How Does DNS server operate? What is the port number of DNS? Classify DNS server Types in detail.

(CO3) [Comprehension]

14. Write in detail about the performance parameters of Data Communication Networks.

(CO4) [Comprehension]

15. a) List any five differences between the switch and Router.

b) What is MAC address? Show the representation of MAC addresses in different formats.

(CO3) [Comprehension]

## PART C

**ANSWER ALL THE QUESTIONS**

**(2 X 15 = 30M)**

16. List some of the possible services of network layer.

(CO2) [Knowledge]

17. Consider the following data 10011101 is transmitted using the standard CRC method and the polynomial is  $x^3+1$ .

a. What is the actual bit string transmitted?

b. Suppose the third bit from the left is inverted during transmission. How will the receiver detect this error?

(CO2) [Application]