

Roll No. : .....

Total No. of Questions : 16 ]

[ Total No. of Printed Pages : 3

# **SEMC-214**

**M.Sc. (IInd Semester) Examination, 2022**

**COMPUTER SCIENCE**

Paper - FS-COMP-MS-C-CC-202

**(Data Communication and Networking)**

*Time : 1½ Hours ]*

*[ Maximum Marks : 40*

*Note :-* The question paper contains three Sections.

**Section-A**

**(Marks : 1 × 10 = 10)**

*Note :-* Answer all the *ten* questions (Answer limit **50** words). Each question carries **1** mark.

**Section-B**

**(Marks : 3 × 5 = 15)**

*Note :-* Answer *five* questions by selecting at least *one* question from each Unit (Answer limit **200** words). Each question carries **3** marks.

**Section-C**

**(Marks : 5 × 3 = 15)**

*Note :-* Answer any *three* questions by selecting *one* question from each Unit (Answer limit **500** words). Each question carries **5** marks.

**Section-A**

1. (i) What is a Protocol ?
- (ii) Differentiate between port address, logical address and physical address.

**BI-279**

( 1 )

**SEMC-214** P.T.O.

- (iii) Define analog signal.
- (iv) What are the major functions of data link layer ?
- (v) What is Routing ?
- (vi) Name the duties of transport layer.
- (vii) What is transmission impairment ?
- (viii) Define cyber crime.
- (ix) What are Key loggers ?
- (x) Which type of attack was done on AIIMS, Delhi on 23rd November, 2022 ?

### **Section-B**

#### **Unit-I**

- 2. Explain OSI protocol stack.
- 3. Explain Virtual Circuit.
- 4. Which type of signal is transmitted via twisted-pair and coaxial cable ? How is it different from fiber-optic cable ? Explain transmission process in fiber-optic cable.

#### **Unit-II**

- 5. What is sliding window ? Explain its working.
- 6. What is Tunneling ? Explain IPv6.
- 7. Discuss client-server model.

#### **Unit-III**

- 8. What is authentication security service ? Discuss five such services.
- 9. Explain Digital signatures.
- 10. What is SQL injection ?

## **Section–C**

### **Unit–I**

11. Differentiate between encoding and modulation. Discuss digital to analog transmission.
12. Why guard band is used ? Explain WDM and FDM with their similarities and differences.

### **Unit–II**

13. Discuss TCP and UDP.
14. Name application protocols and discuss any *two* of them.

### **Unit–III**

15. What is information security ? Categorise cyber crime.
16. Write short notes on the following :
  - (a) ITA 2000
  - (b) Steganography and DOS