

Roll No. : 22.....

Total No. of Questions : 16 ]

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## SEMC-214

M.Sc. (IIInd Semester) Examination, 2022

COMPUTER SCIENCE

Paper - FS-COMP-MSC-CS-CC-202

(Data Communication and Networking)

Time : 1½ Hours ]

[ Maximum Marks : 40

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

Section-A (Marks :  $1 \times 10 = 10$ )

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

Section-B (Marks :  $3 \times 5 = 15$ )

**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 :  $5 \times 3 = 15$ )

**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.

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- ✓ (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

1. Explain OSI protocol stack.

2. 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. Draw 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

① System Hacking ② Computer Hacking ③ Net Work Hacking