

B.C.A. (PART-III) EXAMINATION, 2019
(Faculty of Science)
(Three-Year Scheme of 10+2+3 Pattern)
NETWORKING TECHNOLOGIES - 333

Time Allowed : Three Hours

Maximum Marks : 100

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer book only. Answer of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book.

No supplementary answer-book will be given to any candidate. Hence the candidates should write the answer precisely in the main answer-book only.

Write your roll number on question paper before start writing answers of questions.

Question paper consists of three Parts. All THREE parts are compulsory.

PART - I : (Very Short Answer) consists of 10 questions of 2 marks each. Maximum limit for each question is up to 40 words.

PART - II : (Short answer) consists of 5 questions of 4 marks each. Maximum limit for each question is up to 80 words.

PART - III : (Long answer) consists of 5 questions of 12 marks each with internal choice.

PART - I

1. Attempt all questions. Each question carries 2 marks.

10x2=20

- (a) Define a network.
- (b) What is IP address ?
- (c) What are the various types of networks ?
- (d) What is the role of a switch in a network ?
- (e) What is the importance of the OSI Physical Layer ?
- (f) What are MAC addresses ?
- (g) What advantages does fiber optics have over other media ?
- (h) What is SMTP ?
- (i) What is IPv6 ?
- (j) What are some drawbacks of implementing a ring topology ?

PART - II

2. Attempt all questions. Each question carries 4 marks. 5x4=20
- (a) Explain the relationship between Band Width and Data Rate.
 - (b) Explain different modes of communication.
 - (c) Differentiate between Multicast and Broadcast.
 - (d) What is the difference between Asynchronous and Synchronous transmission?
 - (e) What basic function does a communication satellite perform? Give a good reason why up-link and down-link frequencies are not same?

PART - III

3. (a) Explain different types of Network Topologies with their advantages and disadvantages. 12
- OR
- (b) Explain different components of data communication network. What is the need of a data communication network? 10+2=12
4. (a) How does the transport layer ensure that the complete message arrives at the destination, and in the proper order? 12
- OR
- (b) Define the term Error detection. Explain Cyclic Redundancy Check (CRC) with example. 12
5. (a) Describe the various layers in TCP/IP. 12
- OR
- (b) Write short notes on the following: 4x3=12
- (i) SMTP
 - (ii) FTP
 - (iii) Telnet
 - (iv) IPv6
6. (a) Compare between circuit switching and packet switching w.r.t. 4x3=12
- (i) Transmission Delay
 - (ii) Path
 - (iii) Bandwidth
 - (iv) Intermediate Storage
- OR
- (b) What is multiplexing? Explain Time division multiplexing with a suitable diagram. What are the advantages of TDM? 2+4+6
7. (a) Explain characteristics of micro waves and its applications in detail. 12
- OR
- (b) Describe the structure of an optical fiber and explain the mechanism of light propagation along the fiber. 12

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