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(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA-403

(**Computer Networking**)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) What is topology? Explain different types of topology with diagram. 1+5=6
- (b) Define networking. Explain different components of network. 1+3=4
- Or*
- (c) Explain the four levels of addresses that are used in an Internet employing TCP/IP protocols. 4

- (d) What is transmission impairment? Explain the common types of transmission impairment in data communication with suitable diagram. 1+5=6

2. (a) What is multiplexing? Write the difference between frequency division multiplexing (FDM) and time division multiplexing (TDM). 1+5=6
- (b) Explain the propagation modes of fiber optic cable. 4

Or

- (c) What is circuit-switch network? Explain different phases involved in circuit switching with diagram. 1+3=4
- (d) Write notes on the following : 3+3=6
- (i) Radio waves
- (ii) Microwaves
3. (a) Explain the following : 2×5=10
- (i) Redundancy
- (ii) Checksum
- (iii) Humming code
- (iv) Cyclic redundancy check (CRC)
- (v) Parity check bit

(3)

Or

- (b) (i) Differentiate between error detection and error correction. 2+2=4
- (ii) Write two functions of data-link layer. 2
- (iii) What will be the humming distance of d(10101, 11110)? 2
- (iv) What will be the minimum humming distance of d(000, 011), d(001, 110), d(011, 100)? 2

4. (a) (i) What is IP address? Explain the difference between IPv4 and IPv6. 1+4=5
- (ii) Write the functions of transport layer. 5

Or

- (b) (i) Explain the three-way handshaking method of TCP for connection termination with diagram. 5
- (ii) Explain the distance vector routing with suitable diagram. 5

5. (a) Mention one area where you can find the use of HTTP. In what way HTTP is similar to FTP and SMTP? Explain the working mechanism of HTTP protocol.

1+2+3=6

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- (b) What do you mean by FTP? Explain two types of FTP connections. 2+2=4

Or

- (c) What is wireless LAN? Explain the two promising wireless technologies for LANs. 1+6=7
- (d) What is Domain Name System? Briefly explain the generic domains and country domains by giving example. 1+2=3

Subject Code : IV/BCA/403

Booklet No. **A**

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Date Stamp

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To be filled in by the Candidate

DEGREE 4th Semester
 (Arts / Science / Commerce)
 Examination, **2017**

Subject

Paper

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To be filled in by the Candidate

DEGREE 4th Semester
 (Arts / Science / Commerce)
 Examination, **2017**

Roll No.

Regn. No.

Subject

Paper

Descriptive Type

Booklet No. B

INSTRUCTIONS TO CANDIDATES

- 1. The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
- 2. This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
- 3. While answering the questions of this booklet, any cutting, erasing, overwriting or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

*Signature of
Scrutiniser(s)*

*Signature of
Examiner(s)*

*Signature of
Invigilator(s)*

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(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA-403

(Computer Networking)

(PART : A—OBJECTIVE)

(Marks : 25)

*The figures in the margin indicate full marks
for the questions*

I. Put a Tick (✓) mark against the correct answer in the
brackets provided : 1×10=10

1. Which of the following is a framework for
defining standard for linking heterogeneous
computers in a network?

(a) ISO ()

(b) OSI ()

(c) TCP/IP ()

(d) All of the above ()

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(2)

2. Which of the following is a connecting device in which it broadcasts data to every computer in a network?

(a) HUB ()

(b) Switch ()

(c) Router ()

(d) Gateway ()

3. Anything that can carry information from source to destination is

(a) guided medium ()

(b) unguided medium ()

(c) transmission medium ()

(d) twisted pair ()

4. In optical fiber, signal is transmitted in the form of

(a) electrical signal ()

(b) magnetic signal ()

(c) electromagnetic signal ()

(d) light signal ()

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(3)

5. Data-link layer is responsible for moving frames from

- (a) node-to-node ()
- (b) host-to-host ()
- (c) application to transport layer ()
- (d) None of the above ()

6. The mechanism to detect and retransmit damage or loss frames is

- (a) flow control ()
- (b) error control ()
- (c) humming distance ()
- (d) humming code ()

7. In which of the following each node in the domain has the entire topology of the domain, the list of nodes and links, etc?

- (a) Distance vector routing ()
- (b) Link-state routing ()
- (c) Shortest path tree ()
- (d) Flooding ()

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8. The connection establishment procedure in TCP is susceptible to a serious security problem called

(a) denial of service attack ()

(b) SYN flooding attack ()

(c) FIN flooding attack ()

(d) ACK flooding attack ()

9. The well-known port number of HTTP is

(a) 20 ()

(b) 21 ()

(c) 61 ()

(d) 80 ()

10. Which of the following requires a unique user-name and password to access the FTP directory?

(a) Anonymous FTP ()

(b) Non-anonymous FTP ()

(c) Telnet ()

(d) None of the above ()

(5)

II. State whether the following statements are *True* or *False* by putting a Tick (✓) mark : 1×5=5

1. TCP and UDP are the protocols operating at the application layer.

True () *False* ()

2. Sine wave is defined by three characteristics—amplitude, frequency and phase.

True () *False* ()

3. ACK and NAK can flow in opposite direction for flow control and error control purposes.

True () *False* ()

4. Dissemination of link state packet (LSP) to every other node is called flooding.

True () *False* ()

5. IEEE Committee calls the gigabit ethernet under the name 802.3u.

True () *False* ()

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(6)

III. Answer the following questions : 2×5=10

1. What is sine wave? Explain its characteristics.

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2. Why do they twist the UTP cable?

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3. What is stop-and-wait ARQ?

4. What are the services offered by TCP?

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(9)

5. What is telnet?

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