Enrollment No......................................

Faculty of Commerce
End Sem (Odd) Examination Dec-2019
CM3EC02 Data Communication & Networking
Programme: B.Com.(Hons)   Branch/Specialisation: Commerce

Duration: 3 Hrs.   **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1   i.   The _____ is the physical path over which a message travel.   **1**
            (a) Protocol   (b) Medium   (c) Signal   (d) All of these

      ii.   The information to be communicated in a data communications   **1**
            system is the   _____.
            (a) Medium   (b) Protocol   (c) Message   (d) Transmission

      iii. Type of computer data transmission which uses a clock to control   **1**
            timing of bit being sent is:
            (a) Synchronous   (b) Parallel
            (c) Asynchronous   (d) None of these

      iv.   Which topology requires a central controller or hub?   **1**
            (a) Mesh   (b) Star   (c) Bus   (d) Ring

      v.   Which topology requires a multipoint connection?   **1**
            (a) Mesh   (b) Star   (c) Bus   (d) Ring

      vi.   A _____ is a data communication system within a building,   **1**
            plant, or campus, or between nearby buildings.
            (a) MAN   (b) LAN   (c) WAN   (d) None of these

      vii. DNS referred as: **1**
            (a) Data Name Server   (b) Data Network System
            (c) Domain Name System   (d) Data Network Security

      viii. IPv4 address has size of   **1**
            (a) 64 bits   (b) 32 bits   (c) 128 bits   (d) 48 bits

      ix.   How many bits are there in the MAC address?   **1**
            (a) 64 bits   (b) 48 bits   (c) 32 bits   (d) 16 bits

P.T.O.

      x.   Largest professional engineering society in world is   **1**
            (a) American National Standards Institute
            (b) Electronic Industries Association
            (c) Institute of Electrical and Electronics Engineers
            (d) International Organization for Standardization

Q.2   i.   Define various forms of information.   **2**
      ii.   Explain concept of Data Communication.   **3**
      iii. Identify various components of Data Communication with   **5**
            diagram.
OR   iv.   What are the differences between half and full duplex   **5**
            transmission?

Q.3   i.   Arrange Hub, Bridge, Switch, Router, Gateway according to their   **2**
            functionalities in OSI model.
      ii.   How do guided media differ from Unguided media?   **8**
OR   iii. What are the differences between parallel and Serial transmission?   **8**

Q.4   i.   Differentiate Internet, Intranet and Extranet with example.   **3**
      ii.   What are the various network topologies explain with the diagram?   **7**
OR   iii. Explain LAN, WAN, MAN, VPN and SAN.   **7**

Q.5   i.   Define different class of IPv4 with examples.   **4**
      ii.   Explain OSI and TCP/IP model with layer architecture.   **6**
OR   iii. Define DNS, FTP and HTTP with the help of suitable example.   **6**

Q.6   Attempt any two:
      i.   What are the major components of satellite communication?   **5**
      ii.   Explain architecture of ATM network.   **5**
      iii. Define different multiplexing techniques used in communication.   **5**

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Marking Scheme
CM3EC02 Data Communication & Networking

Q.1

i. The _____ is the physical path over which a message travel. **1**
(b) Medium

ii. The information to be communicated in a data communications **1**
system is the _____.
(c) Message

iii. Type of computer data transmission which uses a clock to control **1**
timing of bit being sent is:
(a) Synchronous

iv. Which topology requires a central controller or hub? **1**
(b) Star

v. Which topology requires a multipoint connection? **1**
(c) Bus

vi. A _____ is a data communication system within a building, **1**
plant, or campus, or between nearby buildings.
(b) LAN

vii. DNS referred as: **1**
(c) Domain Name System

viii. IPv4 address has size of **1**
(b) 32 bits

ix. How many bits are there in the MAC address? **1**
(b) 48 bits

x. Largest professional engineering society in world is **1**
(c) Institute of Electrical and Electronics Engineers

Q.2

i. Audio 0.5 mark **2**
Video 0.5 mark
Text 0.5 mark
Image 0.5 mark

ii. Delivery 1 mark **3**
Accuracy 1 mark
Timeliness 1 mark

iii. Diagram 2 mark **5**
Components: message, sender, medium, receiver 3 mark

OR iv. Half duplex transmission 2.5 mark **5**
Full duplex transmission 2.5 mark

Q.3

i. Application layer-Gateway 0.5 mark **2**
Network layer-Router 0.5 mark
Data link Layer-Switch, Bridge 0.5 mark
Physical Layer-Hub 0.5 mark

ii. Diagrams 3 marks **8**
Explanation of various types 5 marks

OR iii. Diagrams 3 marks **8**
Explanation of various types 5 marks

Q.4

i. Internet 1 mark **3**
Intranet-particular Area 1 mark
Extranet-private Domain use share private information
1 mark

ii. Diagrams 2 mark **7**
Various types of topologies 5 mark

OR iii. Diagrams 2 mark **7**
Various types of topologies 5 mark

Q.5

i. Class A 1 mark **4**
Class B 1 mark
Class C 1 mark
Class D 1 mark

ii. OSI model 3 marks **6**
TCP/IP model 3 marks

OR iii. DNS: Domain Name Service 2 marks **6**
FTP: File transfer protocol 2 marks
HTTP: Hyper text Transfer protocol 2 marks

Q.6 Attempt any two:

i. Major components of Satellite Comm. **5**
Diagrams 2.5 marks
Explanation 2.5 marks

ii. Diagrams 2.5 marks **5**
Explanation 2.5 marks

iii. Diagrams 2.5 marks **5**
Explanation 2.5 marks

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