180835/170835/
120835/030835

3rd Sem. / Comp., IT

Subject : Data Communications

Time : 3 Hrs.   M.M. : 100

SECTION-A

Note: Multiple choice Questions. All questions are compulsory   (10x1=10)

(Course Outcome/CO)

Q.1   Which of the following is not a category of data transmission mode.   (CO-1)
   a)   Half duplex   b)   Full duplex
   c)   Simplex   d)   Half Simplex

Q.2   Physical arrangement of devices on the network is called _____.   (CO-8)
   a)   Protocols   b)   Topology
   c)   Trailer   d)   LAN

Q.3   Which of the following is not a transmission impairment.   (CO-2)
   a)   Attenuation   b)   Distortion
   c)   Noise   d)   Bandwidth

Q.4   In _____ encoding, we use three levels: positive, zero and negative.   (CO-3)
   a)   Unipolar   b)   Polar
   c)   Bipolar   d)   None of above

Q.5   In _____ transmission, bits are transmitted simultaneously, each across its own wire.(CO-8)
   a)   Synchronous serial
   b)   Asynchronous serial
   c)   Parallel   d)   None of above

Q.6   In cycleic redundancy check, what is the CRC?   (CO-6)
   a)   The divisor   b)   The quotient
   c)   The remainder   d)   The dividend

Q.7   In _____ error correction, the receiver corrects errors without requesting retransmission. (CO-8)
   a)   Onward   b)   Backward
   c)   Forward   d)   None of above

Q.8   Signals with a frequency of less than 2 MHz uses _____ propagation.   (CO-5)
   a)   Ground   b)   Sky
   c)   Line of sight   d)   None of above

Q.9   _____ consist of a central conductor and a shield.   (CO-5)
   a)   Coaxial   b)   Fibre optics
   c)   Twisted pair   d)   None of above

Q.10 PCM is an example of _____.   (CO-3)
   a)   Digital to digital   b)   Analog to analog
   c)   Analog to digital   d)   Digital to analog

SECTION-B

Note: Objective type questions. All questions are compulsory.   (10x1=10)

Q.11 WAN stands for _____.   (CO-1)

Q.12 When the data is in continuous manner then it is known as analog data. (T/F)   (CO-2)

Q.13 _____ signals accomplish a pattern in a period and then change the pattern in the other interval. (T/F) (CO-2)

Q.14 Amplitude shift keying is a type of digital to analog conversion. (T/F) (CO-3)

Q.15 Name any two analog to digital conversion schemes. (CO-3)

Q.16 FDM stands for _____. (CO-4)

Q.17 Microwave is a type of unguided media. (CO-5)

Q.18 _____ transmits signals in the form of light from sender to receiver. (CO-5)

Q.19 Block parity is not a type of error correction method. (T/F) (CO-6)

Q.20 Define parity bits. (CO-6)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Define topology. Differentiate between star and bus topology. (CO-1)

Q.22 Give any five differences between analog and digital signals. (CO-2)

Q.23 Explain asynchronous serial transmission technique with diagram. (CO-3)

Q.24 What are twisted pair cables. Explain its any one type. (CO-5)

Q.25 Explain parallel transmission with its advantages and disadvantages. (CO-3)

Q.26 Explain terms bandwidth and throughout related to network performance. (CO-2)

Q.27 What are radio waves? Give its five characteristics. (CO-5)

Q.28 Discuss the process of parity re-computation. (CO-2)

Q.29 Differentiate between synchronous and asynchronous TDM. (CO-3)

Q.30 Describe simplex, half duplex and full duplex communications. (CO-1)

Q.31 Explain amplitude shift keying with diagram. (CO-3)

Q.32 Differentiate between guided and unguided media. (CO-5)

Q.33 Discuss parity bit method for detecting errors. (CO-6)

Q.34 Discuss CRC method for error detection and correction. (CO-6)

Q.35 Differentiate forward error correction and retransmission. (CO-6)

SECTION-D

Note: Long answer type questions. Attempt any two out of three questions. (2x10=20)

Q.36 What are transmission impairments? What are different types of transmission impairments in detail. (CO-2)

Q.37 Define modulation. Explain AM, PM and FM with the help of diagram. (CO-3)

Q.38 What do you mean by multiplexing. Explain any one type of multiplexing in detail. (CO-4)

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SECTION-A

Note: Multiple choice Questions. All questions are compulsory   (10x1=10)

(Course Outcome/CO)

Q.1 The _____ rate define the number of data elements sent in 1s; the ____ rate is the number of signal elements sent in 1s.   (CO-1)
a) signal; data   b) data; signal
c) baud; bit   d) none of the above

Q.2 Frequency of failure and network recovery time after a failure measures of the ____ of a network.   (CO-4)
a) Performance   b) Security
c) Reliability   d) Feasibility

Q.3 A_____ is the physical path over which a message travels.   (CO-1)
a) Path   b) Medium
c) Protocol   d) Route

Q.4 A ____ set pf rules that governs data communication.   (CO-1)
a) Protocols   b) Standards
c) RFCs   d) Servers

Q.5 In TDM, slots are further divided into___   (CO-2)
a) Seconds   b) Frames
c) Packets   d) Bits

Q.6 The word _____ refers to the portion of a ____ that carries a transmission.   (CO-1)
a) line; channel   b) channel; link
c) link; channel   d) line; link

Q.7 In a_____ connection, more than two devices can share a single link.   (CO-1)
a) Point-to-point   b) Primary
c) Multi-point   d) Secondary

Q.8 The _____ between two words is the number of differences between corresponding bits,   (CO-5)
a) Hamming rules   b) Hamming code
c) Hamming distance d) none of the above

Q.9 PCM is example of _____ conversion.   (CO-2)
a) analog-to-analog   b) digital-to-digital
c) digital-to-digital d) digital-to-analog

Q.10 In fiber optics, the signal is_____ waves (CO-3)
a) radio   b) light
c) infrared
d) very low-frequency

SECTION-B

Note: Objective type questions. All questions are compulsory.   10x1=10

Q.11 Define data communication.   (CO-1)

Q.12 What do you mean by communication protocol.   (CO-1)

Q.13 List two types of networks.   (CO-1)

Q.14 In _____, the amplitude of the carrier signal is varied to create signal elements. Both frequency and phase remain conant (PSK/ASK) (CO-1)

Q.15 AM and FM are example of _____conversion (CO-2)

Q.16 What is the major factor that makes coaxial cable less susceptible to noise than twisted-pair cable (CO-3)

Q.17 _____ waves are used for short-range communications such as those between a PC and a peripheral device (CO-3)

Q.18 Radio waves are_____. (unidirectional/ omnidirectional) (CO-3)

Q.19 Two categories of transmission media are_____ (CO-3)

Q.20 _____ cable consists of an inner copper core and a second conducting outer sheath (CO-3)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. 12x5=60

Q.21 Write any four disadvantages of fibre optic cable. (CO-3)

Q.22 Compare serial and parallel data communication in term of seed of data transfer.
(CO-4)

Q.23 Explain five components of a data communication system. (CO-1)

Q.24 Write a short note on distributed processing (CO-4)

Q.25 Briefly discuss the division multiplexing (CO-2)

Q.26 Differentiate between LAN and WAN. (CO-1)

Q.27 What do you mean by PCM. Explain in brief (CO-2)

Q.28 Discuss the parity bit method for detecting errors. (CO-5)

Q.29 Write a short note on FDM. (CO-2)

Q.30 Explain Local Area Networks. (CO-1)

Q.31 Explain the structure and properties of coaxial cable (CO-3)

Q.32 Different between periodic and Non-periodic signals. (CO-1)

Q.33 Explain Attenuation, Distortion and Noise. (CO-4)

Q.34 What is error correction. How error detection is different from error correction.
Also differentiate between forward error correction and retransmission. (CO-5)

Q.35 Write down the advantages and dis-advantages of twisted pair cable. (CO-3)

SECTION-D

Note: Long answer type questions. Attempt any two out of three questions. 2x10=20

Q.36 Explain in detail with the help of diagrams AM, FM and PM (CO-2)

Q.37 Explain various digital to analog modulation techniques. (CO-2)

Q.38 Explain the method of error detection and correction using cyclic redundancy check.
(CO-5)

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180835/170835/120835
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3rd Sem. / Computer Engg.

Subject : Data Communication

Time : 3 Hrs.   M.M. : 100

SECTION-A

Note: Objective type questions. All questions are
compulsory   (10x1=10)

(Course Outcome/CO)

Q.1   MAN stands for _____.   (CO-1)

Q.2   The block of data is known as_____.(CO-2)

Q.3   Data can be represented as digital signal.(T/P)
                                                   (CO-3)

Q.4   TDM stands for_____.   (CO-4)

Q.5   WDM stands for_____.   (CO-4)

Q.6   LRC stands for_____.   (CO-5)

Q.7   CRC stands for_____.   (CO-4)

Q.8   Mention unguided media types.   (CO-5)

Q.9   What is byte.   (CO-2)

Q.10 Define Topology.   (CO-1)

SECTION-B

Note: Very Short answer type questions. Attempt any
ten parts   10x2=20

Q.11 What is bandwidth.   (CO-1)

Q.12 Mention various components of data
communication.   (CO-1)

Q.13 What is multiplexing?   (CO-2)

Q.14 Define data communication.   (CO-2)

Q.15 Define Distortion.   (CO-2)

Q.16 Define Modulation.   (CO-4)

Q.17 Define metallic media.   (CO-3)

Q.18 Define phase jitter.   (CO-5)

Q.19 State error detection .   (CO-5)

Q.20 Define synchronous trnasmission. (CO-4)

Q.21 Explain the term throughput. (CO-3)

Q.22 State Bus topology. (CO-1)

SECTION-C

Note: Short answer type questions. Attempt any five questions. 5x8=40

Q.23 Explain LAN briefly. (CO-1)

Q.24 Write characteristics of Co-axial cable. (CO-3)

Q.25 Explain synchronous frame format. (CO-4)

Q.26 Explain LAN with diagram. (CO-1)

Q.27 Explain different data encryption standards (CO-5)

Q.28 Explain FDM in details. (CO-3)

Q.29 State transmission characteristic of optical fiber. (CO-3)

Q.30 Explain delta Modulation with block Diagram. (CO-3)

Q.31 Short notes on

i) Attenuation ii) Distortion (CO-4)

Q.32 Explain in brief twisted pair & Co-axial cable. (CO-5)

SECTION-D

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.33 Compare LAN, MAN,& WAN. (CO-1)

Q.34 Explain transmission mode? List the various types of transmission modes with diagrams. (CO-2)

Q.35 Explain unguided media with their characteristics. (CO-5)

Q.36 Explain the concept of TDM with the help of diagram. (CO-4)

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3rd Sem. / Comp, IT
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Time : 3 Hrs.   M.M. : 100
SECTION-A

Note: Multiple choice questions. All questions are compulsory   (10x1=10)

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

Q.2 In asynchronous transmission, the gap time between bytes is _____   (CO-4)
a) Variable   b) Fixed
c) Zero   d) A function of the data rate

Q.3 Which multiplexing technique transmits digital signals?   (CO-2)
a) WDM   b) FDM
c) TDM   d) None of the above

Q.4 A _____ error means that two or more bits in the data unit have changed.   (CO-5)
a) burst   b) double-bit
c) single-bit   d) none of the above

Q.5 _____ cable consists of an inner copper core and a second conducting outer sheath. (CO-3)
a) Twisted-pair   b) Shielded twisted-pair
c) Coaxial   d) Fiber-optic

Q.6 Transmission media are usually categorized as _____   (CO-3)
a) determinate or indeterminate
b) fixed or unfixed
c) guided or unguided
d) metallic or nonmetallic

Q.7 _____ can impair a signal.   (CO-4)
a) Noise   b) Attenuation
c) Distortion   d) All of the above

Q.8 _____ is the rate of change with respect to time.
a) Time   b) Frequency
c) Amplitude   d) Voltage   (CO-4)

Q.9 Data can be _____.   (CO-2)
a) digital   b) analog
c) (a) or (b)   d) none of the above

Q.10 _____ are used for short-range communications such as those between a pc and a peripheral device.   (CO-3)
a) Radio waves   b) Infrared waves
c) Microwaves   d) None of the above

SECTION-B

Note: Objective type questions. All questions are compulsory.   (10x1=10)

Q.11 Define the term bandwidth.   (CO-2)
Q.12 LAN stands for _____   (CO-1)
Q.13 Mention the advantage of twisted pair cable.   (CO-3)

Q.14 The _____ is the physical path over which message travels.   (CO-1)

Q.15 A _____ is a data communication system within a building, plant, or campus, or between nearby buildings. (LAN / WAN). (CO-1)

Q.16 _____ conversion is the process of changing one of the characteristics of an analog signal based on the information in the digital data. (CO-2)

Q.17 Define the term throughput. (CO-1)

Q.18 Why analog -to-analog modulation technique is required. (CO-2)

Q.19 Define periodic signals. (CO-2)

Q.20 What are burst errors. (CO-5)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 What are the component of data communication model. Discuss is brief. (CO-1)

Q.22 What is amplitude shift keying (ASK) Explain in brief. (CO-2)

Q.23 Explain in brief digital to digital conversion schemes. (CO-2)

Q.24 Write short notes on a (CO-3)
a) Radio wave   b) microwave

Q.25 Explain in brief that how parties is use in error detection. (CO-5)

Q.26 Write short note on transmission impairment. (CO-4)

Q.27 Differentiate between : (CO-2)
a) Periodic and non periodic signals
b) analog and digital signals.

(3) 180835

Q.28 What do you understand by PCM. (CO-2)

Q.29 Compare wave length division multiplexing and time Division multiplexing. (CO-2)

Q.30 Discuss in brief infrared Transmission media. (CO-3)

Q.31 What is Modulation and why we need modulation. (CO-2)

Q.32 Write short notes on: (a) AM (b) PM (CO-2)

Q.33 Write down the advantages and dis-advantages of twisted pair cable. (CO-3)

Q.34 Differentiate between detection and correction. (CO-5)

Q.35 Differentiate between Guided and Unguided media. (CO-3)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 What is guided media? What are the different types of guided media. Explain them in detail. (CO-3)

Q.37 Compare LAN, WAN, and MAN. (CO-1)

Q.38 What are different error correction methods. Explain any one in detail. (CO-5)

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