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Total Number of Pages : 2

B.TECH

4th Semester Regular Examination April-May 2019

BITPC4030 – COMPUTER NETWORKS

(Regulations 2017) IT Branch.

Time : 3 Hours

Maximum : 100 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 x 2=20 Mark

Q.1. Answer ALL Questions.

- a The checksum of 1111 and 1111 is _____. [CO1] [PO1]
a) 0000 b) 1111 c) 1110 d) 0111
- b Identify the class of IP address 4.5.6.7 [CO1] [PO1]
a. Class A b. Class B c. Class C d. Class D
- c _____ is a dynamic mapping protocol in which a physical address is found for a given IP address. [CO1] [PO1]
ARP b. RARP c. ICMP d. None of the above
- d DNS can use the services of _____ using the well-known port 53. [CO4] [PO1]
A) UDP B) TCP C) either (a) or (b) D) none of the above
- e In IPV4 addressing format, the number of network allowed under Class C address is: [CO3] [PO1]
a) 2^{14} b) 2^7 c) 2^{21} d) 2^{24}
- f If an Ethernet destination address is 08-07-06-05-44-33, then this is a _____ address. [CO3] [PO1]
Unicast b. Multicast c. Broadcast d. Any of the above.
- g How many cross points are needed in a single stage switch with 40 inputs and 50 outputs? [CO4] [PO1]
a. 40 b. 50 c. 90 d. 2000
- h Which of the following is present in both an HTTP request line and a status line? [CO4] [PO1]
a) HTTP version number b) URL c) status code d) none of the above
- i In Class B network on the internet has a subnet mask 255.255.248.0, what is the maximum number of hosts per subnet? [CO4] [PO1]
a) 1022 b) 1023 c) 2046 d) 2047
- j In cyclic redundancy checking, the divisor is _____ the CRC. [CO2] [PO1]
A) one bit less than B) one bit more than C) The same size as D) none of the above

PART – B: (Short Answer Questions) 2x10=20 Marks

Q.2. Answer ALL questions

- a Differentiate between half-duplex and full-duplex transmission mode? [CO1] [PO1]
- b Differentiate between classful addressing and classless addressing in IPV4? [CO3] [PO1]
- c A receiver receives the bit pattern 01101011. If the system is using even parity, what is the pattern in error? [CO2] [PO1]
- d What are the message types used by ICMP? [CO3] [PO1]
- e Differentiate between FTP and HTTP? [CO4] [PO1]
- f Define Bit Rate and what is its counterpart in an analog signal? [CO1] [PO1]
- g Compare and Contrast between Flow Control and Error Control? [CO2] [PO1]
- h What is the total number of cable links required in a star, bus, ring and mesh topology for n number of devices in a network? [CO3] [PO1]
- i Assume there is no noise in a communication medium of Bandwidth(B)=4 KHz, determine the Channel capacity(C) for the encoding level 4? [CO4] [PO1]
- j How is CSMA a clear improvement over ALOHA? [CO4] [PO1]

**PART – C: (Long Answer Questions) 15x4=60 Marks****Q.3 Answer ALL questions**

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| a. Explain the utility of a Layered network architecture? Compare ISO-OSI and TCP/IP models. | 10 | [CO1] [PO1] |
| b. Name the three types of transmission impairment. Describe them briefly. | 5 | [CO1] [PO1] |

OR

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|--|---|-------------|
| c. Name the different Switching techniques. Differentiate between circuit Switched networks and datagram networks. | 8 | [CO1] [PO1] |
| d. Describe the layered architecture of OSI model with functions of each layer. | 7 | [CO1] [PO1] |

Q.4

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|---|----|-------------|
| a. How does Go-Back-N-ARQ differ from Selective Repeat ARQ? | 10 | [CO2] [PO1] |
| b. How does CSMA/CD differ from CSMA/CA? | 5 | [CO2] [PO1] |

OR

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|---|----|-------------|
| c. What is Piggybacking? | 5 | [CO2] [PO1] |
| d. Given the data word “101001111” and the divisor “10111”, show the generation of cycle redundancy check(CRC) codeword at the sender site. | 10 | [CO2] [PO1] |

Q.5

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|--|----|-------------|
| a. What is ARP and explain its functioning at the Network Layer? What is RARP and why it is used at network Layer. Give answers to both questions with proper explanation and figures. | 10 | [CO3] [PO1] |
| b. There are no sequence numbers in Frame Relay. Why? | 5 | [CO3] [PO1] |

OR

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|--|----|-------------|
| c. Explain Bluetooth Protocol Architecture and list its application? | 10 | [CO3] [PO1] |
| d. What are the common Gigabit Ethernet implementations? | 5 | [CO3] [PO1] |

Q.6

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|---|----|-------------|
| a. What is World Wide Web? Draw and explain architectural overview of World Wide Web? | 10 | [CO4] [PO1] |
| b. What is silly window syndrome? | 5 | [CO4] [PO1] |

OR

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|---|---|-------------|
| c. What is Domain Name System? Explain Resource records and Name Server for Domain Name System? | 7 | [CO4] [PO1] |
| d. Write short note on:-
(a)TCP vs UDP
(b)SMTP | 8 | [CO4] [PO1] |

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