

PURBANCHAL UNIVERSITY

2021

B.E. (Computer)/Sixth Semester/Final

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BEG375CO: Computer Network (New Course)

Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Answer EIGHT questions.

8×10=80

- 1(a) What is computer network? Write the history of the computer network. 5
- (b) Differentiate between connection oriented and connectionless services in computer network. 5
- 2(a) Why do we use CSMA-CA instead of CSMA-CD? 5
- (b) Differentiate between twisted pair, coaxial cable and optical fiber of guided media. 5
3. What is RAID technology? Discuss the different levels of RAID in brief. 3+7
- 4(a) List the IEEE standard 802 for LANs. Explain any three. 5
- (b) Which layer of X.25 is called packet layer protocol? Explain virtual circuit of X.25. 5
5. What is congestion control in computer network? Differentiate between leaky bucket and token bucket algorithm. 4+6
6. Why error detection and correction is required in computer network? Explain how Checksum can be used for error detection with suitable example. 3+7
7. How TCP/IP differ from OSI model. Explain each layer of OSI in detail. 3+7
8. What is cryptography? Explain different types of cryptography with example. 2+8
9. Write short note on any TWO: 2×5=10
 - (a) TCP format
 - (b) Protocol Standards
 - (c) Network workstation
 - (d) Firewall

PURBANCHAL UNIVERSITY

2019

B.E. (Computer)/Sixth Semester/Final

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BEG375CO: Computer Network (New Course)

Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Answer EIGHT questions.

8×10=80

- 1(a) Mention the important benefits of computer networks. 5
- (b) Differentiate between connection oriented and connectionless services in computer network. 5
- 2(a) Why do we use CSMA-CA instead of CSMA-CD? 5
- (b) Differentiate between twisted pair, coaxial cable and optical fiber of guided media. 5
3. What is RAID technology? Discuss the different levels of RAID in brief. 2+8
- 4(a) List the IEEE standard 802 for LANs. Explain any three. 5
- (b) Which layer of X.25 is called packet layer protocol? Explain virtual circuit of X.25. 5
5. What is congestion control in computer network? Differentiate between leaky bucket and token bucket algorithm. 4+6
6. Why error detection and correction is required in computer network? Explain how Checksum can be used for error detection with suitable example. 3+7
7. How TCP/IP differ from OSI model? Explain each layer in detail. 3+7
8. What is cryptography? Explain the concept of digital signature. 2+8
9. Write short note on anyFOUR. 4×2.5=10
 - (a) TCP format
 - (b) Protocol Standards
 - (c) Network workstation
 - (d) APRET
 - (e) Firewall



PURBANCHAL UNIVERSITY

2018

B.E. (Computer)/Sixth Semester/Final

Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BEG375CO: Computer Network (New Course)

Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Answer EIGHT questions.

- 1(a) Mention the important benefits of computer networks. 5
- ✓ (b) Briefly explain each layer of OSI model. 5
- 2(a) Briefly explain with suitable example of CSMA/CD protocol. 5
- (b) Explain RAID in detail. 5
- 3(a) What are the three major classes of guided media? Briefly explain them. 5
- (b) Describe and distinguish between FDMA and TDMA. 5
- 4(a) What is an Ethernet address? Explain IEEE802.3 and the Ethernet. 1+4
- (b) What are the drawbacks in 802.3 which are overcome in 802.4? 5
- 5 Explain leaky-bucket and token bucket algorithms. 5+5
- 6(a) Briefly explain TCP/IP protocol architecture. 5
- ✓ (b) Differentiate between IPv4 and IPv6. 5
7. What is non-adaptive routing algorithm? Explain various types of adaptive routing algorithms? 2+8
- 8(a) What is protocol? Classify IP address on the basis of classes and version. 5
- (b) What is ICMP protocol? Explain types of error generated by ICMP. 1+4
9. Write short note on any TWO. 2×5=10
- ✓ (a) Domain model (b) Bridge (c) Aloha

PURBANCHAL UNIVERSITY

2017

B.E. (Computer)/Sixth Semester/Final

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BEG375CO: Computer Network (New Course)

Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Answer EIGHT questions.

1(a) Define computer network. Discuss any four applications of computer network.

(b) What is network topology? Explain different types of network topology.

2(a) What is transmission media? What are different types of media? Explain.

(b) Describe how CSMA/CD works.

3(a) What is Multiplexing? Describe time division and frequency division multiplexing techniques.

(b) What do you mean by packet switching?

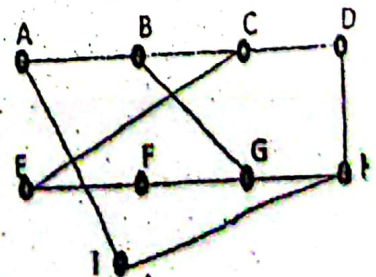
4(a) A bit word 1011 is to be transmitted. Construct the even parity seven-bit Hamming code for this data.

(b) Explain go back N sliding window protocol.

5(a) Explain link state routing algorithm.

(b) For the given network construct a new routing table for node A using distance vector routing algorithm on the basis of given information.

From\To	A	B	C	D	E	F	G	H	I	
A	0	10	24	38	12	24	16	19	9	IA Delay = 8
H	20	31	19	8	30	19	6	0	7	IH delay = 12



6(a) What do you mean by congestion in network? How congest

(2)

- ✓ (b) Differentiate between Leaky bucket and Token bucket algorithm. 5
- 7(a) ✓ Give the overview of TCP/IP. How it differs from OSI reference architecture? 5
- (b) Draw a packet format for UDP. Describe each field in brief. 5
- 8(a) A company is granted a site address 201.70.64.0. The company needs six subnets. Design the subnets. 5
- (b) What is firewall? Describe the basic components of firewall. 5
9. Write short note on any TWO. $2 \times 5 = 10$
- ✓ (a) Connection oriented and connection less service
 - (b) FDDI
 - ✓ (c) OSI reference architecture.
 - (d) Router and Bridge

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PURBANCHAL UNIVERSITY

2016

B.E. (Computer)/Sixth Semester/Final

Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BEG375CO: Computer Network (New Course)

Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Answer EIGHT questions.

- 1(a) Differentiate between OSI reference model and TCP/IP model. 4
- (b) Differentiate between TCP and UDP protocol. 1+5
- 2(a) Briefly explain about hub, switch and router in terms of collision domain and broadcast domain. 1+4
- (b) Explain with suitable example about multicast, unicast and broadcast addressing. 5
- 3(a) Explain briefly about different kinds of transmission media used in computer networks. 4
- (b) Describe and distinguish between FDMA and TDMA. 2+4
- 4(a) Briefly explain about IEEE 802.4 frame format. 2+2
- (b) List out different types of error detection and correction techniques. How Hamming code is different from CRC? 2+2+2
- 5(a) Explain leaky bucket algorithm and compare it with token bucket algorithm. 4
- (b) What are the routing algorithms? Briefly explain about distance vector and link state routing algorithms with suitable example. 2+4
6. Briefly explain application layer protocols HTTP, SMTP, POP and IMAP. 10

Contd. ...

(2)

- 7(a) What is sub-netting? Why is it so important in IP addressing?
Briefly explain different types of classes of IP addresses with their
network and host addresses. 1+2+4
- (b) What is the importance of IPv6 over IPv4? 3
- 8(a) Discuss jitter control. 4
- (b) Discuss importance of gateways and bridges. 6
9. Write short note on any TWO. 5+5
- (a) Symmetric cryptography (DES, AES)
 - (b) ICMP
 - (c) Substitution Cipher

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PURBANCHAL UNIVERSITY

2015

B.E. (Computer)/Sixth Semester/Final

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BEG375CO: Computer Network (New Course)

Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Answer EIGHT questions.

- 1(a) List out the merits and demerits of computer network. 4
- (b) What do you mean by Encapsulation? Differentiate between TCP/IP and OSI reference models. 1+5
- 2(a) What is a network server? Explain IP classification in detail. 1+4
- (b) With the help of flow chart explain how CSMA/CD works? 5
- 3(a) Differentiate between analog transmission and digital transmission. 4
- (b) What are the advantages and disadvantages of circuit switching? Compare circuit switching with packet switching. 2+4
- 4(a) What are the different steps in ARQ? Write short notes on selective repeat sliding window protocol. 2+2
- (b) What are the assumptions made in slotted ALOHA? Write down pros and cons of slotted ALOHA. Calculate the throughput in percentage for a pure ALOHA network if the offered traffic G is 0.75. 2+2+2
5. What are the main differences between distance vector routing and link state routing? Explain with an example how distance vector routing is used to route packet. What is count to infinity problem? 3+5+2
6. Explain how does congestion happen over the network. Explain with suitable diagram, the concept of token-bucket algorithm. 3+7

Contd. ...

(2)

7(a) Explain 4-way handshaking in TCP.

4

(b) Write short notes on:

2+2+2

(i) ICMP

(ii) ~~ARP~~

(iii) TCP/IP features

8(a) Explain IPv4 datagram format in detail. What are the importances of IPv6 over IPv4?

4+2

(b) Find the sub-network address of the following:

4

IP Address: 200.34.22.156

Mask: 255.255.255.240

9(a) What are the desirable properties of secure communication?

4

(b) Explain in brief about:

3+3

(i) Ceaser Cipher

(ii) Digital signature

PURBANCHAL UNIVERSITY

2014 (New)

B.E. (Computer)/Sixth Semester/Final

Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

REG375CO: Computer Network

Candidates are required to give their answers in their own words as far as practicable.

Questions carry equal marks. The marks allotted for each sub-question are specified along its side.

Answer EIGHT questions.

- (a) What do you understand by Computer Network? Write down the various network topologies and explain any one of them. 5
- (b) Explain OSI reference model. 5
- (a) Explain in brief NIC, Switches, Routers. 6
- (b) Explain in brief CSMA/CD, IEEE 802.3. 4
- (a) Explain PCM briefly. 3
- (b) What are different encoding schemes? Explain details. 7
- (a) Explain Go-Back N-ARQ and Selective-Repeat ARQ with figure. 6
- (b) What is routing? Explain briefly flooding. 4
- (a) Describe link state routing with algorithm and example. 6
- (b) What are adaptive and non-adaptive algorithms? 4
- (a) What is error detection technique? Explain CRC with the help of example. 5
- (b) List the performance comparison between IEEE 802.4 and IEEE 802.5. 5
- (a) What is firewall? Explain its techniques and types. 5
- (b) What is Icmp? Explain different types of error generated by Icmp. 5
- (a) What is congestion? List the comparison between Leaky Bucket and Token Bucket algorithm. 5

Contd. ...

(2)

- (b) What is IP address and subnet mask? What are the functions of subnetting? Give example of subnetting. 5
- 9(a) What are different ~~Guided~~ or Wired transmission medium. Explain any two of them in detail. 6
- (b) Differences between Circuit Switching and Packet Switching. 4
10. Write short notes on: 5×2=10
 - (a) Aloha
 - (b) Http
 - (c) ARP, RARP
 - (d) Port address and MAC address
 - (e) Digital Signature

Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Answer EIGHT questions.

- 1(a) What is computer Networks? Write down the various network topologies and explain any one of them. 2+2+2
- (b) What is connectionless and connection-oriented service? Explain in brief with suitable example. 4
- 2(a) Briefly describe Hub Switch and router in terms of their number of broadcast and collision domain. 5
- (b) Briefly explain the working principle of CSMA/CD. 5
- 3(a) Explain different kinds of switching techniques. 5
- (a) What are the guided and unguided transmission media? Explain any one of them. 5
- 4(a) Briefly explain with frame format of IEEE 802.3 standard. 5
- (b) What is satellite Networks? Briefly describe about ALOHA. 2+3
- 5(a) Explain leaky bucket algorithm and compare it with token bucket algorithm. 5
- (b) Briefly explain IP header format. 5
- 5(a) Why TCP is known as connection-oriented protocol? Briefly describe TCP segment format. 5
- (b) Draw the layer diagram of TCP/IP protocol suit and explain it briefly. 5
- 7(a) Briefly describe ARP and RARP protocol. 5
- (b) What is subnet mask? Explain briefly about the classes of IP addresses. 5
3. What is cryptography? Explain transposition cipher with an example. 10

(2)

9. Write short notes on any TWO.

2x5 = 10

[a] Firewall

[b] Digital Signature

[c] OSI reference model

