

R18

Code No: 155AN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, September - 2021

COMPUTER NETWORKS
(Computer Science and Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) What are the advantages of computer networks?
- b) Explain about the functionality of each layer in ISO-OSI reference model with a neat sketch. [5+10]
- 2.a) Write about twisted pair cables and coaxial cables with neat diagram.
- b) Draw and explain Internet architecture with a neat sketch. [8+7]
3. What is framing? Explain various framing techniques of Data Link Layer. [15]
- 4.a) Compare and contrast Pure ALOHA and Slotted ALOHA channel allocation Methods.
- b) Explain about simplex stop and wait protocol for noisy channel. [8+7]
- 5.a) What are the design issues of Network Layer? Explain in detail.
- b) Define congestion. Write about congestion control policies. [7+8]
- 6.a) Explain about hierarchical routing algorithm.
- b) Differentiate between broadcasting and multicasting. [7+8]
- 7.a) Discuss about the performance issues in Transport Layer.
- b) Explain each field in TCP header with neat diagram. [7+8]
- 8.a) What is DNS? Explain the architecture of DNS Servers in Internet.
- b) Write short notes on World Wide Web. [8+7]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, March - 2021

COMPUTER NETWORKS
(Computer Science and Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) Explain the functionality of each layer in OSI reference model.
b) Discuss about Internet standards. [8+7]
- 2.a) Explain about various transmission media in physical layer with a neat sketch.
b) What are the responsibilities of Presentation layer and Session layer of OSI model? [8+7]
- 3.a) Write about CSMA and CSMA/CD in detail.
b) Explain how slotted ALOHA solves the problem of Channel allocation. [8+7]
- 4.a) What are the design issues of Data Link Layer? Explain.
b) Explain in detail about the Simplex Stop and Wait protocol. [8+7]
- 5.a) Describe the General principles of Congestion Control.
b) The major problem with distance vector algorithm is 'count to infinity'. How exchange of complete path from router to destination instead of delay, helps in solving count to infinity problem. [8+7]
- 6.a) Explain about Hierarchical routing algorithm.
b) Explain about QoS in Network layer. [7+8]
- 7.a) Explain in brief about TCP connection establishment and Release.
b) Describe in brief about TCP segment Header. [8+7]
- 8.a) Write short notes on Electronic Mail.
b) How DNS service maps domain names to IP addresses? Give an example. [8+7]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year I Semester Examinations, February - 2022****COMPUTER NETWORKS****(Computer Science and Engineering)****Time: 3 hours****Max. Marks: 75****Answer any five questions
All questions carry equal marks**

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- 1.a) Compare OSI and TCP/IP reference model.
b) Explain about various transmission media in physical layer with a neat sketch. [7+8]
- 2.a) What is the purpose of CSMA CD? And Explain it.
b) Write and explain about various multiple access protocols. [7+8]
3. Explain the functions of following devices:
a) Hub
b) Bridge
c) Router
d) Gateway. [4+4+3+4]
- 4.a) Write briefly about Congestion control in datagram subnets.
b) What is internetworking? List out the internetworking devices. [7+8]
5. Demonstrate how to make routing table using distance vector routing and list down the limitations. [15]
- 6.a) What are the services provided by transport layer to the upper layers?
b) Explain the connection establishment and release in transport layer. [7+8]
- 7.a) What is DNS? What are the services provided by DNS?
b) How Streaming of audio and video can be done? [7+8]
- 8.a) How would you summarize the concepts of E-mail, its architecture and services?
b) Elaborate on SNMP with an example. [7+8]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, August - 2022

COMPUTER NETWORKS

(Computer Science and Engineering)

Time: 3 Hours

Max. Marks: 75

**Answer any five questions
All questions carry equal marks**

- 1.a) What is the importance of layered architecture in network models? Discuss in detail.
- b) Differentiate between TCP/IP network model and ISO-OSI reference model. [7+8]
- 2.a) Discuss about Network hardware components in detail.
- b) What are the advantages of fiber optic cables? Explain with a neat sketch. [7+8]
- 3.a) What are the design issues of Data Link Layer? Explain in detail.
- b) Compare and contrast CSMA/CD and CSMA/CA for channel allocation. [7+8]
4. What are various types of Error Detection methods? Explain about Cyclic Redundancy Check Error Detection Method with suitable example. [15]
- 5.a) Define Routing. Explain Distance Vector Routing Algorithm with an example.
- b) What are the advantages and limitations of flooding? [9+6]
- 6.a) Describe link state vector routing algorithm example.
- b) How to achieve quality of service using leaky bucket algorithm. [7+8]
- 7.a) Explain connection management in transport layer.
- b) Compare and contrast TCP and UDP Protocols. [7+8]
- 8.a) What are the major components in E-mail system? And explain the role of SMTP for sending and receiving messages.
- b) Discuss about HTTP request and response mechanisms. [8+7]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year I Semester Examinations, January/February - 2023****COMPUTER NETWORKS****(Common to CSE, CSBS, CESE, CSE(AIML), CSE(DS), CSE(IOT))****Time: 3 Hours****Max. Marks: 75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) What is ARPANET? [2]
- b) Write about Co-axial cable transmission media? [3]
- c) What is framing? [2]
- d) What are the advantages of sliding window protocol? [3]
- e) What is non-adaptive routing? [2]
- f) What is meant by congestion? [3]
- g) What is the function of transport layer? [2]
- h) What is UDP? [3]
- i) What is the function of application layer? [2]
- j) What is DNS? [3]

PART – B**(50 Marks)**

2. Explain the TCP/IP reference model. [10]
- OR**
3. Explain about fiber optics transmission media. [10]
4. Explain the stop-and-wait protocol. [10]
- OR**
5. Explain about wireless LAN. [10]
6. Explain the shortest-path routing algorithm. [10]
- OR**
- 7.a) Explain the IPV4 header.
- b) What is packet fragmentation? [5+5]
8. Explain the elements of transport layer. [10]
- OR**
9. Explain the TCP transmission policy. [10]
10. Explain about HTTP. [10]
- OR**
11. Explain about streaming audio. [10]