

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018**

**Course Code: CS306**

**Course Name: COMPUTER NETWORKS (CS)**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 3 marks.*

Marks

- |   |  |     |
|---|--|-----|
| 1 | How are computer networks classified on the basis of physical size?  | (3) |
| 2 | Differentiate between normal and asynchronous balanced modes of operations in HDLC.                                | (3) |
| 3 | What are the reasons for using Layered Architecture in Computer Networks? Define the terms protocol and interface. | (3) |
| 4 | Draw and explain the frame format for Ethernet.  | (3) |

**PART B**

*Answer any two full questions, each carries 9 marks.*

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|---|--|-----|
| 5 | a) What are the OSI service primitives for connection oriented service?                  | (4) |
|   | b) Explain the phases in a PPP connection with the help of a transition diagram.         | (5) |
| 6 | a) How collision is avoided in CSMA/CA? Describe the different strategies used for this. | (5) |
|   | b) List out the key design issues that occur in Computer Networks.                       | (4) |
| 7 | a) Describe the ISO/OSI layered architecture with the help of a neat diagram.            | (5) |
|   | b) Write notes on IEEE 802.5 standard.   | (4) |

**PART C**

*Answer all questions, each carries 3 marks.*

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|----|---|-----|
| 8  | What is flooding? Describe any two situations where flooding is advantageous. | (3) |
| 9  | Compare classful and classless addressing, giving examples for both.          | (3) |
| 10 | Write short note on RIP.  | (3) |
| 11 | List and explain any three closed loop congestion control techniques.         | (3) |

**PART D**

*Answer any two full questions, each carries 9 marks.*

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|----|--|-----|
| 12 | a) Describe the format of IPv4 datagram with the help of a diagram, highlighting the significance of each field. | (6) |
|----|--|-----|

- b) Differentiate between static and dynamic routing. (3)
- 13 a) Explain distance vector routing with an example. (6)
- b) Define Subnetting. What are the advantages of Subnetting? Explain with an example (3)
- 14 a) Discuss the common techniques used in computer networks to improve the QoS. (4)
- b) Explain the different steps in link state routing. (5)

### PART E

*Answer any four full questions, each carries 10 marks.*

- 15 a) Write notes on the messages and message formats used in IGMP (5)
- b) Describe the *name-address* resolution techniques used in DNS (5)
- 16 a) Write notes on MIME (5)
- b) Differentiate between BOOTP and DHCP. (5)
- 17 a) Explain how routing is done using BGP (5)
- b) Describe the operation and packet format of UDP. (5)
- 18 a) What is the use of ARP? Explain ARP operation and packet format. (7)
- b) Distinguish between partially qualified and fully qualified domain names (3)
- 19 a) Explain the three different phases in a TCP transmission with the help of diagrams. (7)
- b) List and explain the different types of error reporting messages used by ICMP. (3)
- 20 a) Explain the File Transfer Protocol (FTP) and its features. (5)
- b) Draw and explain the datagram format for IPv6. (5)

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