Hall Ticket Number:

Code No. : 21504

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD

M.E. (ECE: CBCS) I-Semester Main Examinations, January-2018

(Communication Engineering & Signal Processing)

Data and Computer Communication Networks

Time: **3** hours Max. Marks: **60**

*Note: Answer **ALL** questions in **Part-A** and any **FIVE** from **Part-B***

Part-A (10 × 2 = 20 Marks)

1. Draw a schematic diagram showing different blocks of data communication system.
2. Illustrate the differences between network layer delivery and transport layer delivery.
3. Describe sliding-window flow control protocol.
4. Describe the frames supported by HDLC.
5. Compare packet switching and circuit switching.
6. Design three stage space division switch.
7. List the key elements of Layer 2 switches.
8. Describe the functions performed by a hub.
9. Describe the various types of firewalls.
10. Write the advantages and disadvantages of ATM over frame relay.

Part-B (5 × 8 = 40 Marks)
(All sub-questions carry equal marks)

11. a) Describe the protocol architecture as a framework for standardization and explain the concept.
    b) Which version of IP is the most prevalent today? What tasks are performed by the transport layer?

12. a) Discuss the hierarchy of TDM, FDM.
    b) Illustrate xDSL with an example.

13. a) Illustrate the differences between datagram and virtual circuit operation.
    b) Discuss SS7 with a block diagram.

14. a) Illustrate the design aspects and loop resolution in bridges.
    b) Discuss the IEEE 802.11 MAC frame format including the fields.

15. a) Explain the advantages of the use of virtual paths in detail.
    b) Discuss the security in internet with an example.

16. a) Explain protocol data units in the TCP / IP architecture with an example.
    b) Illustrate the characteristics of physical layer interface.

17. Answer any ***two*** of the following:
    a) Illustrate effects of variable packets in x.25 networks.
    b) Draw a schematic and explain the connection of two LANs by a bridge.
    c) SIP, H.323.