

TILAK MAHARASHTRA VIDYAPEETH, PUNE
BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)(044)/
SPECIALIZATION IN CYBER SECURITY (CS) - (464) /
BACHELOR OF SCIENCE (CYBER SECURITY-760)/
BACHELOR OF SCIENCE (COMPUTER APPLICATIONS - 750)/
BCA (DATA SCIENCE AND MACHINE LEARNING - 786)/
BSC (DATA SCIENCE & ARTIFICIAL INTELLIGENCE - 799)
EXAMINATION : MAY/JUNE - 2026
SEMESTER - I

Sub: Computer Fundamentals Networking/Computer & Network Fundamentals
(BCA140-20/78625-103/BCA23-103/BSC24-103/79925-103/
BCA-CS-140-20/76025-103/BSCC24-103/46425-103/BCAC23-103)

Date : 05/06/2026

Total Marks : 60

Time: 10.00 am to 12.30 pm

Instructions:

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labelled diagrams wherever necessary.

Q.1. Fill in the blanks.

(5)

1. A _____ is a device used to connect different types of networks
 - a) Router
 - b) Firewall
 - c) Gateway
 - d) Hub
2. The _____ gate is frequently referred to as an Inverter
 - a) NOT
 - b) AND
 - c) OR
 - d) NAND
3. The _____ is the OSI reference model that interacts directly with user software
 - a) Physical layer
 - b) Application layer
 - c) Session layer
 - d) Data Link layer
4. A _____ is a device used to convert digital signals into analog signals for transmission over telephone lines
 - a) Hub
 - b) Router
 - c) Modem
 - d) Switches
5. A _____ typically connects multiple LANs across a city-wide geographic area
 - a) MAN
 - b) WAN
 - c) LAN
 - d) None of these.

Q.2. State True/False.

(5)

1. A Network Interface Card (NIC) is a device used in networking.
2. Ad hoc mode is a valid mode of operation for wireless networks.
3. The Octal number system uses a base of 16.
4. BUS topology, all nodes are connected to a single central cable.
5. Scanners are classified as output devices because they produce digital files.

Q.3. Answer the following. (Solve any 5) (10)

1. Give the differences between impact and non-impact printers
2. Compare the Peer-to-Peer networking model with the Client-Server model.
3. What is Intranet and Extranet?
4. Elaborate on the differences between Primary Storage and Secondary Storage
5. Discuss the various uses of the Internet
6. What is Telnet and HTTP protocol?

Q. 4. Answer the following in detail. (Solve any 6) (30)

1. Describe any 3 topologies.
2. Explain Wireless Security protocols.
3. Explain NAND gate and NOR gate and provide their respective truth tables.
4. Convert a. $(2347)_8 = (?)_{10}$ b. $(167)_{10} = (?)_{16}$
5. What is an IP address? Explain the classes of it.
6. Write an algorithm and draw flowchart to find out simple interest
7. Provide a detailed comparison of Repeaters, Hubs, and Switches, explaining how they handle data traffic differently

Q. 5. Answer the following in detail. (Solve any 1) (10)

1. Provide an overview of the OSI Reference Model and briefly explain the function of each of its seven layers
2. Explain in detail scanner and its type.
