

**Dr. Babasaheb Ambedkar Open University**  
**Term End Examination July – 2026**

|                     |                                           |                   |                             |
|---------------------|-------------------------------------------|-------------------|-----------------------------|
| <b>Course</b>       | <b>: BSCCS</b>                            | <b>Date</b>       | <b>: 18/07/2026</b>         |
| <b>Subject Code</b> | <b>: BSCCS-303</b>                        | <b>Time</b>       | <b>: 03:00pm to 05:15pm</b> |
| <b>Subject Name</b> | <b>: Data Communications and Networks</b> | <b>Duration</b>   | <b>: 02.15 Hours</b>        |
|                     |                                           | <b>Max. Marks</b> | <b>: 70</b>                 |

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**Section A**

**Answer the following (Attempt any three) (30)**

1. Discuss the uses, benefits and components of Computer Networks.
2. Explain Transmission Media and classify it into Guided and Unguided Media.
3. Explain the OSI Reference Model. Discuss the functions of all seven layers.
4. Discuss the functions of different layers of TCP/IP architecture.
5. Explain Network Topologies with their advantages and disadvantages.

**Section B**

**Answer the following (Attempt any four) (20)**

1. Differentiate between LAN, MAN and WAN.
2. Explain Database Server, Mail Server and Web Server.
3. Explain Analog and Digital Signals with suitable examples.
4. Explain Client-Server Network and Peer-to-Peer Network.
5. Explain the functions of Hub and Switch.
6. Explain Switching Techniques and Routing in Computer Networks in brief.

**Section C**

**Part – A (Multiple Choice Questions) (10)**

1. ARPANET stands for:  
A) Advanced Research Project Agency Network  
B) Advanced Routing Project Agency Network  
C) American Research Protocol Agency Network  
D) Automated Research Process Agency Network
2. Which device works mainly as a broadcast device?  
A) Router  
B) Switch  
C) Hub  
D) Bridge
3. Which network covers a small geographical area such as a school or office?  
A) WAN  
B) MAN  
C) LAN  
D) PAN
4. Which protocol is commonly used for transferring files over the Internet?  
A) HTTP  
B) FTP  
C) SMTP  
D) POP3
5. Which layer of the OSI model is responsible for routing?  
A) Data Link Layer  
B) Physical Layer  
C) Transport Layer  
D) Network Layer
6. Which transmission medium provides the highest transmission speed?  
A) Twisted Pair Cable  
B) Coaxial Cable  
C) Optical Fiber  
D) Telephone Cable

7. TCP stands for:

- |                                       |                                   |
|---------------------------------------|-----------------------------------|
| A) Transfer Control Protocol          | B) Transmission Control Protocol  |
| C) Transmission Communication Process | D) Transfer Communication Process |

8. Which device is used to connect two different networks?

- |           |             |
|-----------|-------------|
| A) Hub    | B) Bridge   |
| C) Router | D) Repeater |

9. Which topology uses a central connecting device?

- |         |         |
|---------|---------|
| A) Bus  | B) Ring |
| C) Star | D) Mesh |

10. TELNET is primarily used for:

- |                     |                       |
|---------------------|-----------------------|
| A) File Compression | B) Remote Login       |
| C) Database Backup  | D) Network Monitoring |

**Part – B (State whether the following statements are true or false)**

**(10)**

- 1 Data communication is the process of transferring information between devices.
- 2 Hub stores MAC addresses of all connected devices.
- 3 LAN generally provides higher transmission speed than WAN.
- 4 FTP is used for transferring files between computers.
- 5 Analog signals are continuous in nature.
- 6 Digital signals are less affected by noise than analog signals.
- 7 OSI model consists of seven layers.
- 8 TCP/IP is commonly represented as a four-layer architecture.
- 9 Router operates at the Network Layer.
- 10 Star topology depends on a central device.

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