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M.Sc. (I.C.T.) (Sem.-II) Examination April - 2026

Digital Communication - 204

Time: 3 Hours] **[Total Marks: 70**

સૂચના : / Instructions
(1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book

Seat No.:

Student's Signature

Q.1. Answer the following questions (Any four) **16**

1) What is digital modulation? explain Amplitude shift key(ASK) in detail
2) Write short note on Electromagnetic spectrum.
3) Write a comparison between circuit switching and packet switching.
4) What is guided media? Explain optical fiber guided media.
5) Explain 4G Communication technology in detail.

Q.2. Answer the following questions **18**

Q.2. A) Answer the following questions (Any four) **04**

1) Define frequency of wave.
2) Define FSK.
3) What is data packet?
4) List out any four real world application of RFID.
5) What are the advantages of IoT?

Q.2. B) Answer the following questions (Any Two) **14**

1) write short note on satellite communication
2) Write short note on mobile IP.
3) Define multiplexing and explain the Wavelength Division Multiplexing (WDM) techniques in detail.

Q.3. Answer the following questions (Any six) **18**

1) What is sensor?
2) Explain FHSS with an example.
3) What is 5G technology?
4) Write a short note on the sensor node in a wireless sensor network.
5) Explain Packet switching with the help of diagram.
6) Define handoff (handover) in cellular communication. Compare soft hand off and hard hand off.
7) Explain the concepts of Piconet and Scatternet in Bluetooth technology.

Q.4. Answer the following questions **18**

Q.4. A) Answer the following questions in short (Any four) **04**

1) What is the working principle of FDMA?
2) Define wavelength.
3) What is machine-to-machine (M2M) communication'?
4) List the various application fields of 5G technology
5) Define a digital signal.

Q.4. B) Answer the following questions (Any two) **14**

1) Explain GSM cellular network with a diagram
2) Explain the complete Pulse Code Modulation (PCM) process sampling, quantization, and encoding in detail.
3) Write short note on Wireless Fidelity (Wi-Fi).

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