Reg. No.																

Question Paper Code	14314

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2026

Eighth Semester

Electronics and Instrumentation Engineering

20EIEL804 - TELE HEALTH

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (i) (MCQ)
(16 × 1 = 16 Marks)
Answer ALL Questions

		Marks	K – Level	CO
1.	What does RPM stand for in telemedicine? a) Real-time Patient Management b) Remote Patient Monitoring c) Robotic Process Medicine d) Rapid Pathology Management	1	K1	CO1
2.	_____is a major barrier to telemedicine implementation. a) Lack of smartphones. b) Poor internet connectivity in rural areas. c) Too many doctors d) Reduced demand for services	1	K1	CO1
3.	How can telemedicine help during a pandemic? a) It increases in-person contact b) It spreads the infection faster c) It reduces in-person hospital visits d) It makes doctors work faster	1	K2	CO1
4.	_____ network type uses twisted pair cables for high-speed internet connectivity and supports 2B+D channels in Basic Rate Interface. a) POTS b) ISDN c) GSM d) Microwave	1	K2	CO2
5.	Which component of a data communications system is responsible for the rules that govern data communications? a) Sender b) Receiver c) Protocol d) Transmission Medium	1	K2	CO2
6.	What is a key benefit of store-and-forward telemedicine? a) Real-time video b) Asynchronous review of patient data c) Emergency services only d) Manual records	1	K1	CO2
7.	A healthcare entity is transferring patient data across borders for research. Which of the following is the most crucial step to ensure data protection compliance? a) Sending all data in plain text to speed up processing. b) Ensuring the receiving country has strict data protection regulations. c) Getting consent from the patient's family, not the patient. d) Ignoring local laws and following only international laws.	1	K3	CO3
8.	A hospital receives a request to release Patient A's information, but the authorization document is missing the date of signature. What is the best action? a) Approve the request, as the date is not necessary. b) Contact the patient and ask them what the date should be. c) Deny the request and ask for a complete, properly signed authorization. d) Write in the current date for the patient.	1	K3	CO3
9.	What is the main goal of data protection in healthcare? a) To make data accessible to all hospital staff. b) To ensure data is secured and protected from unauthorized users. c) To sell patient data for research. d) To keep records for only one year.	1	K1	CO3

10.	A technologist finds that a new CT scanner cannot query the PACS for patient information, but can send images. Which DICOM service is likely misconfigured? a) DICOM Storage SCP b) DICOM Modality Worklist (MWL) c) DICOM Query/Retrieve SCU d) DICOM Send	*1*	*K2*	*CO4*
11.	A radiologist complains that the images are loading very slowly, although the network is fast. What is the most likely technical issue? a) DICOM C-STORE failure b) Inefficient Image Compression setting c) Improper AE Title d)Misconfugured IP Address	*1*	*K3*	*CO4*
12.	Which protocol is essential for communicating patient scheduling information from an HIS to a RIS? a) DICOM b) HL7 c) FTP d) SNMP	*1*	*K2*	*CO4*
13.	Telecardiology is primarily used for the remote monitoring and transmission of a) Histopathology images. b) EEG signals only. c) Cardiac data such as ECGs, echocardiograms, and heart sounds. d) Surgical procedures	*1*	*K1*	*CO5*
14.	When implementing a real-time (live) telepathology system for intraoperative consultation, which technical aspect is most critical to ensure an accurate diagnosis compared to traditional light microscopy? a) The ability to scan and store whole-slide images in a PACS system. b) High-speed, high-resolution color imaging with high-fidelity color reproduction. c) Utilizing JPEG 2000 lossy compression to minimize data usage. d) The system's ability to operate in an asynchronous "store-and-forward" manner.	*1*	*K3*	*CO5*
15.	A teledermatology initiative is implemented in a rural area. Which factor is most crucial to avoid over-diagnosis or under-diagnosis of skin lesions? a) Allowing the patient to take photos with any available smartphone. b) Using standardized image acquisition protocols and high-resolution cameras. c) Relying primarily on patient description over images. d) Reducing the color resolution to ensure faster transmission times.	*1*	*K3*	*CO5*
16.	During a telemedicine consultation, a doctor realizes the patient is under intense distress due to a sensitive diagnosis. The patient cannot be seen physically. Based on the limitations of telemedicine, what is the best ethical and clinical approach? a) Continue the consult normally to save time. b) Terminate the call and ask the patient to come in-person immediately. c) Acknowledge the distress, validate their emotions verbally, and schedule an in-person follow-up if needed. d) Refer them to a chatbot for mental health counseling.	*1*	*K3*	*CO5*

PART - A (ii) (Short Answer Questions)
(8 × 3 = 24 Marks)
Answer ALL Questions

17.	Analyze the role of "Store-and-Forward" technology in improving healthcare delivery in rural primary health centers.	*3*	*K4*	*CO1*
18.	Distinguish between Telehealth and Telecare with a suitable example for each.	*3*	*K4*	*CO1*
19.	Examine the shift from circuit-switched to packet-switched networks.	*3*	*K4*	*CO2*
20.	How do Text and Data streams from wearables integrate into Electronic Health Records (EHR)?	*3*	*K3*	*CO2*
21.	Organize the conflict between IPR (profit/innovation) and the public right to affordable healthcare.	*3*	*K3*	*CO3*
22.	Identify the core function of a Radiology Information System (RIS).	*3*	*K3*	*CO4*

23.	Why Needs Assessment is critical before PACS implementation?		*3*	*K3*	*CO4*
24.	Identify Static and Dynamic systems in Telepathology.		*3*	*K3*	*CO5*

PART - B (Descriptive Answer Questions)
(5 × 12 = 60 Marks)
Answer ALL Questions

25.	a)	Analyze the evolution of telemedicine from the telegraph era to the integration of AI-driven diagnostics. How has the transition from asynchronous to synchronous communication changed the doctor-patient relationship?	*12*	*K4*	*CO1*
		OR			
	b)	Analyze the major components and workflow of telehealth systems used in modern healthcare.	*12*	*K3*	*CO1*
26.	a)	Construct the integration of Body Area Networks (BAN) using protocols like ANT.	*12*	*K3*	*CO2*
		OR			
	b)	Develop healthcare information systems used in telehealth.	*12*	*K3*	*CO2*
27.	a)	Apply the impact of digital health records on the traditional Patient-Doctor relationship.	*12*	*K3*	*CO3*
		OR			
	b)	Apply the legal issues involved in maintaining patient medical records in telemedicine systems.	*12*	*K3*	*CO3*
28.	a)	Evaluate how DICOM facilitates communication between the acquisition modality and the archive.	*12*	*K5*	*CO4*
		OR			
	b)	Justify how a Radiology Information System integrates with PACS for efficient healthcare delivery.	*12*	*K5*	*CO4*
29.	a)	Interpret real-time streaming of echocardiograms and remote pacemaker monitoring.	*12*	*K5*	*CO5*
		OR			
	b)	Assess the critical importance of High-Speed, Low-Latency networks in performing remote surgery.	*12*	*K5*	*CO5*