

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code:UB602

B.E./B.Tech. DEGREE EXAMINATION, APRIL / MAY 2025

Professional Elective

Biomedical Engineering

21BMV602- TELEHEALTH TECHNOLOGY

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define telemedicine. CO1- U
2. How does Telecare help individuals with daily living activities? CO1-U
3. Discuss the advantages of mHealth in remote monitoring and disease management. CO1- U
4. What kind of medical conditions can be diagnosed or monitored using still images in telehealth? CO1- U
5. Clarify the challenges and limitations associated with telesurgery CO1- U
6. Summarize the key purposes of maintaining and accessing medical records in healthcare settings. CO1- U
7. Describe the fundamental principles of confidentiality law in healthcare and legal contexts. CO1- U
8. Can you give the strategies use to build trust and rapport with a patient during a teleconsultation. CO1- U
9. Outline the advantages of telesurgery for surgeon training and skill development CO1- U
10. Identify the need for patient education and support system in teleoncology. CO1- U

PART – B (5 x 16= 80 Marks)

11. (a) (i) Design telemedicine solutions to enhance healthcare delivery in rural areas, integrating perspectives from both global and Indian contexts. CO2- App (8)
- (ii) Justify the selection of key components in a telemedicine system, evaluating their impact on healthcare efficiency and accessibility. CO1- U (8)

Or

- (b) (i) Explain the challenges faced by healthcare providers and patients in adopting telemedicine technology for consultations CO1- U (8)
- (ii) Develop a model for telemedicine adoption based on successful implementations in pioneering countries CO2- App (8)
12. (a) How would you implement a GSM satellite system to improve telemedicine services in remote or underserved areas, and what steps would you take to ensure optimal performance during voice and data transmissions? CO3-App (16)
- Or
- (b) A telemedicine consultation involves sending images of a patient's wound for review. What measures would you take to ensure patient privacy and comply with data security regulations when sharing these images? CO3-App (16)
13. (a) (i) Examine the challenges associated with navigating international telemedicine regulations and their implications for healthcare providers. CO1- U (8)
- Evaluate the effectiveness of different strategies in fostering trust and improving communication in virtual healthcare interactions CO4- Ana (8)
- Or
- (b) (i) Describe the impact of improved communication on patient care and healthcare outcomes CO1- U (8)
- (ii) Analyze the key legal and ethical principles governing confidentiality in healthcare and their implications for patient rights CO4- Ana (8)
14. (a) (i) Develop an innovative PACS model that integrates artificial intelligence, cloud storage, and telemedicine for enhanced medical imaging management. CO2-App (8)
- (ii) Assess the role of automation, artificial intelligence, and machine learning in streamlining RIS workflows. CO1-U (8)
- Or
- (b) (i) Design an optimized medical imaging framework that balances the advantages of DICOM with the benefits of alternative formats CO2-App (8)
- (ii) Compare DICOM with other medical imaging standards and formats in terms of efficiency, accuracy, and accessibility. CO1-U (8)

15. (a) Analyze the role of teleoncology in improving access to cancer care for remote patients through virtual clinical assessments and treatment planning CO4- Ana (16)
- Or
- (b) Analyze the core features of different Teledermatology platforms and their impact on remote dermatological consultations. CO4- Ana (16)

