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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 120008

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024

Seventh Semester

Biomedical Engineering

U19BMV54 – ADVANCEMENTS IN HEALTHCARE TECHNOLOGY

(Regulation 2019)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Identify the requirements for maintaining digital health records.	2	K2	CO1
2.	Name any two international laws governing digital health. Give their significance.	2	K2	CO1
3.	Define teleradiology and its role in digital hospitals.	2	K2	CO2
4.	Mention two benefits of integrating digital radiology with Electronic Health Records (EHRs).	2	K2	CO2
5.	State the objectives of E-health in Medicine.	2	K1	CO3
6.	Define the term- teleconsultation.	2	K1	CO3
7.	Mention the benefits of mobile healthcare devices.	2	K2	CO4
8.	Name four mobile healthcare devices used in medicine.	2	K1	CO4
9.	Name any two e-health projects implemented in India.	2	K2	CO5
10.	Mention two common cyber security threats to healthcare systems.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11.	a) Describe the role of laws and regulations governing Digital Health in India.	13	K2	CO1
	(OR)			
	b) Write about the ethical issues involved in digital health. How you will avoid the ethical problems in implementing digital health. Explain.	13	K2	CO1
12.	a) Discuss about the digital archiving of the radiology records with a specific emphasis on data retrieval and analysis.	13	K2	CO2
	(OR)			
	b) Discuss the challenges of long-term storage in medical image archiving and how they are managed.	13	K2	CO2
13.	a) Explain the process of medical reporting using speech recognition.	13	K2	CO3
	(OR)			
	b) Explain the significance of Health care networking and its impact on patient care delivery.	13	K2	CO3
14.	a) Discuss the advantages of using wearable devices in monitoring arrhythmia in humans compared to traditional methods.	13	K2	CO4
	(OR)			
	b) Discuss how mobile healthcare devices influence hospital stay and outpatient care.	13	K2	CO4
15.	a) Explain about the process involved in the design of medical equipment based on the user requirements.	13	K2	CO5
	(OR)			
	b) Write in detail about multimodality registration in daily clinical practice.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.	Questions	Marks	KL	CO
16.	a) Elaborate about the design, validation, and implementation of implantable smart devices for continuous real-time measurement of blood glucose levels.	15	K2	CO4
	(OR)			
	b) Describe a case study on the design and implementation of digital health in a hospital for data archiving. Discuss the advantages and disadvantages and its problems associated with implementing it.	15	K2	CO1