

Time: (3 Hours)

[Total Marks: 80]

N.B.: (1) Question **No.1** is **Compulsory**.

(2) Attempt **any three** questions from the **remaining** questions.

(3) Assume **suitable** data wherever required but **justify** the same.

(4) **Figures** to the **right** indicate **full marks**.

(5) Answer to each new question must start on a **fresh page**.

1. (a) What type of data analytics is used in healthcare? [5]
(b) Which imaging technologies do not use radiation? Explain those technologies in brief. [5]
(c) What you mean by the term Natural Language Processing for clinical/medical text data. [5]
(d) Define Advanced Data Analytics for Healthcare with six real-world applications. [5]
2. (a) Define Phenotyping Algorithms with key aspects. [10]
(b) What is visualization? Explain different types of visualization techniques, tools with advantages and disadvantages. [10]
3. (a) Illustrate Predictive Modelling in Healthcare with at least two examples. [10]
(b) Describe the following: - [10]
 1. BAN
 2. Dense/Mesh area network for smart living environment
 3. Senor Technology
 4. Image Registration
 5. Feature Extraction
4. (a) What are the components of EHR? What are the barriers for adopting EHR? [10]
(b) Explain types of Fraud detection in healthcare with the help of example. [10]
5. (a) What are the challenges one may face while processing Covid clinical reports? [10]
(b) Define Data science with applications of healthcare data analytics. [10]
6. (a) How will we analyze Mental health status of someone using their tweets on twitter? [10]
(b) Define Biomedical Imaging Modalities with their Applications. [10]
