Question Bank for ESE

**Chapter 3**

1. Explain the challenges involved in processing of the clinical text. (10)



1. Explain precision and recall with suitable example. (5)



1. Explain different steps used in preprocessing of clinical NLP system in detail. (10)



1. Explain five main modules of information extraction in clinical NLP system (10)



**Chapter 4**



1. Explain the methods to detect outbreaks of infectious diseases in detail (10)



1. How can social media analysis be used to analyze and track the spread of the pandemic? Explain (10)



1. Explain the use of social media for detection of reports of adverse medical events and drug reactions. (10)



1. How can data from online doctor and patient communities be analyzed for clinical purpose? Explain in detail (5)



**Chapter 5**

1. Explain decision tree and artificial neural networks as clinical prediction models. (10)



1. Write a detail note on sequential pattern mining for EHR data. (10)



1. List the standard techniques to visualize medical data. (5)



1. Explain different privacy preserving data publishing methods for information retrieval of healthcare data. (10)



**Chapter 6**



1. Explain the concept of smart hospital with suitable example (5)



1. How to identify healthcare fraud from type of medical data? What are the challenges associated with it ? (10)



1. What is spontaneous reporting systems (SRS)? Explain two types of Spontaneous reporting systems in detail



Module 6 (extra Questions)

Explain three link prediction methods in pharmaceutical drug discoveries in detail (5)



Module 1



How can phenotyping algorithms contribute to personalized medicine, and what challenges might arise in utilizing EHR data for this purpose? Provide examples (10)



Discuss the barriers and challenges associated with the widespread adoption of Electronic Health Records (EHR) and propose potential solutions. (10)



Explain the significance of Electronic Health Records (EHR) in improving healthcare delivery, citing specific benefits and components of EHR. (10)



List the different components of electronic health record system (EHR) (5)



Module 2

Explain various biomedical imaging modalities and their applications in healthcare. Discuss the importance of image segmentation and registration in this context.(10)



Design a scenario where object detection in biomedical imaging plays a crucial role in early disease diagnosis. Describe the steps involved and potential challenges.(10)



Discuss the challenges inherent in analyzing genomic data for personalized medicine. How can this data be effectively utilized, and what ethical considerations should be taken into account? (10)



Explain various biomedical imaging modalities and their applications in healthcare. Discuss the importance of image segmentation and registration in this context. (10)



Examine the role of mining sensor data in healthcare. Provide examples of how this data can be leveraged to improve patient outcomes and healthcare processes. (10)

