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Question Paper Code : 20009

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fifth Semester

Artificial Intelligence and Data Science
AD 3002 – HEALTH CARE ANALYTICS
(Regulations 2021)

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Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention various data formats used in healthcare analytics.
2. What is healthcare analytics?
3. State different data structures in python.
4. List out the performance metrics used for model evaluation.
5. Write any four smart sensors used in healthcare management.
6. What is histogram bin shifting?
7. Recall various applications of CNN in healthcare analytics.
8. Specify any four biomedical signals used for analytics.
9. Give any two techniques used in EGG data analysis.
10. Indicate various emerging technologies for healthcare.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the use of probabilistic reasoning and Bayes theorem in clinical data analytics.

Or

- (b) Discuss healthcare policy and various standardized clinical code sets.

12. (a) How to perform data preprocessing and feature selection using scikit-learn in python? Explain with example.

Or

- (b) Summarize the machine learning pipeline used for healthcare analytics.

13. (a) Examine the basic statistical models that are widely used in clinical prediction.

Or

- (b) How are visual analytics useful in healthcare? Explain in detail.

14. (a) Illustrate how denoising of signals are performed in biomedical signal analysis.

Or

- (b) What are the challenges, legal and ethical issues of clinical decision support systems? Explain.

15. (a) Present a case study on smart ambulance system using IoT.

Or

- (b) Write a case study on how to predict mortality for cardiology practice.

PART C — (1 × 15 = 15 marks)

16. (a) Develop a decision support system for cost allocation in national healthcare.

Or

- (b) Analyze the uses of natural language processing and data mining for clinical text.
