

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Sixth Semester)

Branch – COMPUTER SCIENCE

MAJOR ELECTIVE COURSE- II : HEALTH CARE DATA ANALYTICS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Which of the following is an example of healthcare analytics?
 - i) Predicting disease outbreaks using patient data
 - ii) Manufacturing medical equipment
 - iii) Performing surgeries using robotic arms
 - iv) Writing prescriptions for patients
- 2 Identify which of the following is NOT a part of tree-based reasoning?
 - i) Decision Tree
 - ii) Random Forest
 - iii) Naïve Bayes
 - iv) Categorical Reasoning
- 3 Indicate which of the following is a common challenge when working with healthcare data?
 - i) Data visualization
 - ii) Dealing with missing data
 - iii) Choosing font styles
 - iv) Writing medical prescriptions
- 4 Find the primary use of SQL in healthcare analytics?
 - i) Designing medical devices
 - ii) Engineering genetic modifications
 - iii) Managing and querying healthcare databases
 - iv) Conducting clinical trials
5. What is a common application of predictive models in healthcare quality assessment?
 - i) Developing new surgical techniques
 - ii) Predicting patient discharge status
 - iii) Manufacturing pharmaceutical drugs
 - iv) Designing hospital architecture

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Describe the History of health care data analytics.
OR
b Give Examples of Uses of health care data analytics.
- 7 a With diagram explain Decision tree in health care data analytics.
OR
b With example discuss Logistic regression in health care data analytics.
- 8 a Explore and visualize the data health care data analytics.
OR
b Narrate how features are selected in health care data analytics.

Cont...

- 9 a Summarize data engineering with SQL.
OR
b Outline what is Clinical database and how it is used.
- 10 a Specify the concept of comparing hospitals.
OR
b Write code for comparing dialysis facilities using python.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

- 11 a Highlight the uses of health care data analytics.
OR
b Enumerate the foundations of health care data analytics.
- 12 a Implement the naive Bayes classifier to the given data and predict label for the record X (Outlook-sunny, Temperature-75, Humidity-72, Windy-false)

Outlook	Temperature	Humidity	Windy	play
Sunny	85	85	false	No
Sunny	80	90	true	No
Overcast	83	86	false	Yes
Rainy	70	96	false	Yes
Rainy	68	80	false	Yes
Rainy	65	70	true	No
Overcast	64	65	true	Yes
Sunny	72	95	false	No
Sunny	69	70	false	Yes
Rainy	75	80	false	Yes
Sunny	75	70	true	Yes
Overcast	72	90	true	Yes
Overcast	81	75	false	Yes
Rainy	71	91	true	No

OR

- b Explain the use of probabilistic reasoning and Bayes theorem in clinical data analytics.
- 13 a How to perform data preprocessing and feature selection using scikit-learn in python?
Explain with example.
OR
b Elucidate the concept of converting types.
- 14 a How to predict mortality with a cardiology practice.
OR
b Infer the concept of One table at a time with sql.
- 15 a Point out how to predict discharge status of patients.
OR
b Discuss obstacles,ethical issues ,limitations of Deep Learning in health care .

Z-Z-Z

END